Other: □ Re-Route ☐ Access Road ☐ Ancillary Facility Feature ID #: S7AMC001 Stream/Waterbody Name (if known): MISSOURI RIVER Associated Wetland ID #:W7AMC001 Date: 6/5/08 Project Name & No.: Keystone XL-10623-007-803A Milepost: 88.88 Investigators: NOVAK State/County: MT/ MC **Quad Name: MILK RIVER HILLS** Logbook No.: 7A-1 Logbook Page No.: 5 Tract No.: ML-MT-VA-00900.000, 905 Picture No.: s7AMC001\_1W,2N,3E PHYSICAL ATTRIBUTES Waterbody Sketch Plan Please include: Directional & North Arrow, Centerline, Length of feeture, Distances from Centerline, Photo Locations, and Survey corridor ~ (000° scaled From Top of aerial bank Waterbody Ty Cross section Sage | None benK ed plans Waterbody Type Lake Pond ☐ Borrow Pit X River ☐ Stream Ag. Ditch Other: Stream Flow Perennial (Flows year round) Flow Direction of Flow where ☐ Fast ☐ Moderate X Slow Seasonal (Continuous flow ≥ 3 months) it crosses CL: N (N, NE, type Intermittent (Flows <3 months) E, SE, S, SW, W, NW) ☐ Very Slow ☐ None Ephemeral (Flows only in response to rainfall) Subsurface Flow? ☐ No ☑ Unknown ☐ Yes OHWM Width (ft.): ~1000 FT Sinuosity ☐ Straight Stream Width (ft.) Top of Bank (at crossing location): ~1000FT Water Surface (at crossing location): ~1000FT Stream Depth (in.) 0-3 3-6 6-12 12-18 18-24 36-48 24-36 48-60 ⊠ 60+ **OHWM Indicator** Clear natural line on bank ☐ Wrack line ☐ Shelving Scour Abrupt plant community change ☐ Bent, matted or missing ☐ Wrested vegetation ☐ Water staining vegetation ☐ Soil character changes ☐ Sediment deposition Sediment sorting Litter and debris ☐ Leaf litter disturbed Other: Bank Height (ft.) Left: 0-2 2-4 □ 4-6 6-8 □ 8+ (looking downstream) ⊠ 0-2 Right: 2-4 4-6 □ 6-8 □ 8+ Bank Slope (looking Left: 4:1 3:1 2:1 1:1 ☐ Vertical ownstream) Right: 4:1 3:1 2:1 X 1:1 ☐ Vertical



#### Feature ID #: S7AMC001

Date: 6/5/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 88.88
QUALITATIVE AT	TRIBUTES
Water Appearance (check all that apply)	Clear Turbid Sheen on surface Floating algal mats Water Color: Slightly Turbid Very Turbid Greenish color Obvious surface scum TEA  Other:
Stream Substrate %	Silts 40% Cobbles Bedrock Sands 40% Gravel 20% Concrete Muck Vegetation: Other: Explain:
Aquatic Habitats (check all that apply)	Sand Bar  Gravel Riffles  In-stream emergent plants:   Gravel Bar  Deep Pools  In-stream submerged plants:   Mud Bar  Bank root systems  Fringing Wetlands:   Undercut Banks Overhanging trees/shrubs
Aquatic Organisms Observed (check all that apply)	Waterfowl Fish (adult) Turtles Other:  Snakes Fish (juvenile) Frogs Invertebrates:
Riparian Zone	Width of natural vegetation zone from edge of active channel out onto flood plain (FT): 1 ST TERRACE =~ 68FT  Circle vegetative layers: trees ☐ shrubs ☒ herbs ☒  ☐Significant bare areas within riparian zone ☐Evidence of non-buffered concentrated flows
Tributary is	⊠Natural □Artificial (Man-Made) □Manipulated
Channel Condition:	Channelization Unnatural straightening Downcutting Dikes/Berms ☐ Excessive bank or Braiding ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Disturbances	Livestock access to riparian zone   Waste discharge pipes present   Other:
	acteristics, Aquatic & Terrestrial Diversity: Habitat ID No.:
	LOW FLOOD PLAIN TERRACE COMPILED OF A FEW SCATTERED SHRUBS & HERBACEOUS-
GOOD SPECIES DI	VERSITY ON HERBACEOUS. HEARD SONG BIRDS, HAWKS OVERHEAD. THOUGHT WE WOULD
	R FOUL OR SHORE BIRDS, BUT NONE. SAW A SPOTTED FAWN TRYING TO HIDE IN THE OTS OF AQUATIC INSECTS FLYING ABOVE THE WATER SURFACE. NO FISH BITES THOUGH.
0, 2, 1, 10 0, 1, 100, 2	order regarde industrial and other control in the first the first the first state of the control in the control
Comments (e.g. pipeline	crossing angle, construction constraints, erosion potential, existing disturbances, and meanders)
STREAM QUALITY Hi	gh



☑ Centerline ☐ Re	e-Route	ad Ancillary Facili	ty	Feature ID #: S8AD	AUU1
Stream/Waterbod	y Name (if known): UI	PPER SEVENMILI	E CREEK		
				Associated Wetlan	d ID #:
Date: 6/3/08	A CONTROL OF THE PARTY OF THE P	e & No.: Keystone	XL-10623-007-803A		ost: 166.11
Investigators: 8/	Α	State/County: [	DAWSON CO, MT	Quad	Name: UNION SCHOOL
Logbook No.: 1	Logbook Page		ct No.: ML-MT-DA-	-00095.000 Picture	e No.: S8ADA001_E3,N1,S2
PHYSICAL ATTR		ATION GROWING	IN BED		
Waterbody Sket		Contorling Le	th f facture Diet	f-am Cantarline	e, Photo Locations, and
Survey corridor	Allectional & Inoltin An	fow, Centernie, Le	ingth of leature, Disc	ances from Centerior	e, Photo Locations, and
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<u></u>	<i>[</i> ]	-	Name of the last o		
1	. 1				
Angle of Cross	ing at Centerline:				
Waterbody Type	☐ Lake ☐ Pond	☐ Borrow Pit ☐ R	iver ⊠ Stream 🔲	Ag. Ditch Other:	
				rig. Ditori	
Stream Flow	□ Fast □ Moderate	□ Slow Flow	y Perennial (Flow	ws year round)	Direction of Flow where
Stream Flow	☐ Fast ☐ Moderate	type	Perennial (Flow	ws year round) tinuous flow ≥ 3 months) ows <3 months)	Direction of Flow where it crosses CL:E (N, NE, E, SE, S, SW, W, NW)
	☐ Very Slow	∑ None type	Perennial (Flow Seasonal (Cont Manual Cont	ws year round) tinuous flow ≥ 3 months)	it crosses CL:E (N, NE,
Subsurface Flow?	☐ Very Slow ☐ Yes ☐ No	type	Perennial (Flow	ws year round) tinuous flow ≥ 3 months) ows <3 months)	it crosses CL:E (N, NE,
Subsurface Flow?  OHWM Width (ft.):	☐ Very Slow ☐ Yes ☐ No 15	\(\text{ \ None}\) \(\text{ \ Unknown}\) \(\text{ \ Sinuc}\)	Perennial (Flow Seasonal (Cont Intermittent (Flow Intermittent (Flow Intermittent))	ws year round) tinuous flow ≥ 3 months) tows <3 months) tows only in response to	it crosses CL:E (N, NE,
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)	☐ Very Slow ☐ Yes ☐ No  15  Top of Bank (at crossing I	\( \square\) None \( \square\) Unknown Sinual location): 20	Perennial (Flow Seasonal (Cont Seasonal (Cont Intermittent (Flow Intermittent (Flow Intermittent))  Straight  Water Surface (a	ws year round) tinuous flow ≥ 3 months) tows <3 months) tows only in response to	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)  Stream Depth (in.)	☐ Very Slow ☐ Yes ☐ No  15  Top of Bank (at crossing I) ☐ 0-3     3-6	Sinual None Sinual Nocation): 20 □ 6-12 □	Perennial (Flow Seasonal (Cont Seasonal (Cont Intermittent (Flow Intermittent (Flow Intermittent) Project Straight  Water Surface (a	ws year round) tinuous flow ≥ 3 months) ows <3 months) ows only in response to	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)  Meandering  E AT CROSSING
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)	☐ Very Slow ☐ Yes ☐ No  15  Top of Bank (at crossing I ☐ 0-3   ☑ 3-6 ☐ Clear natural line on both	type  None  Unknown  Sinua  location): 20  □ 6-12 □ mank □ Wraa	Perennial (Flow Seasonal (Cont Seasonal (Cont Seasonal (Cont Seasonal (Flow Intermittent	ws year round) tinuous flow ≥ 3 months) ows <3 months) ows only in response to  ☑ N at crossing location): NONE	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)  Meandering E AT CROSSING
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)  Stream Depth (in.)	☐ Very Slow ☐ Yes ☐ No  15  Top of Bank (at crossing I) ☐ 0-3     3-6	type  None  Unknown  Sinua  location): 20  6-12  wrank  Wran  ty change	Perennial (Flow Seasonal (Cont Seasonal (Cont Intermittent (Flow Inter	ws year round) tinuous flow ≥ 3 months) ows <3 months) ows only in response to	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)  Meandering EAT CROSSING  8 48-60 60+
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)  Stream Depth (in.)	☐ Very Slow ☐ Yes ☐ No  15  Top of Bank (at crossing I ☐ 0-3   ☑ 3-6 ☐ Clear natural line on both	type  None Unknown  Sinua  location): 20  Ge-12  ank Wraa  ty change Bent vegetati	Perennial (Flow Seasonal (Control Seasonal (Control Seasonal (Control Seasonal (Control Seasonal (Flow Seasona)	ws year round) tinuous flow ≥ 3 months) bws <3 months) bws only in response to	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)  Meandering E AT CROSSING  8 48-60 60+
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)  Stream Depth (in.)	☐ Very Slow ☐ Yes ☐ No ☐ No ☐ No ☐ No ☐ O-3 ☐ Sank (at crossing I) ☐ O-3 ☐ Sank (at crossing I) ☐ O-3 ☐ Clear natural line on booking I) ☐ Abrupt plant communities	type  None  Unknown  Sinuction): 20  Ge-12  ank  Wranty change  Benty vegetation  Sedi	Perennial (Flow Seasonal (Contemporal Seasonal (Contemporal Seasonal (Contemporal Seasonal (Contemporal Seasonal (Contemporal Seasonal (Contemporal Seasonal (Flow rainfall))  Desity Straight  Water Surface (at 12-18 18-24)  Ck line  t, matted or missing ion ment deposition	ws year round) tinuous flow ≥ 3 months) bws <3 months) bws only in response to	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)  Meandering E AT CROSSING  8 48-60 60+
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)  Stream Depth (in.)	☐ Very Slow ☐ Yes ☐ No  15  Top of Bank (at crossing I ☐ 0-3 ☐ 3-6 ☐ Clear natural line on book of the community of the community ☐ Soil character changes	type  None  Unknown  Sinuction): 20  Ge-12  ank  Wracty change  Bent vegetation  Sedi	Perennial (Flow Seasonal (Contemporal Seasonal (Contemporal Seasonal (Contemporal Seasonal (Contemporal Seasonal (Contemporal Seasonal (Contemporal Seasonal (Flow rainfall))  Desity Straight  Water Surface (at 12-18 18-24)  Ck line  t, matted or missing ion ment deposition	ws year round) tinuous flow ≥ 3 months) bws <3 months) bws only in response to	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)  Meandering E AT CROSSING  8 48-60 60+
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)  Stream Depth (in.)  OHWM Indicator  Bank Height (ft.)	☐ Very Slow ☐ Yes ☐ No ☐ No ☐ No ☐ No ☐ No ☐ No ☐ Soli character changes ☐ Litter and debris	type  None Unknown  Sinuction): 20  Ge-12  ank Wracty change Sedi Leaf	Perennial (Flow Seasonal (Cont Seasonal (Cont Seasonal (Cont Seasonal (Cont Seasonal (Flow Seasonal (Cont Seasona) (Cont Seasonal (Cont Seaso	ws year round) tinuous flow ≥ 3 months) ows <3 months) ows only in response to	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)  Meandering E AT CROSSING  8
Subsurface Flow?  OHWM Width (ft.):  Stream Width (ft.)  Stream Depth (in.)  OHWM Indicator  Bank Height (ft.)	☐ Very Slow ☐ Yes ☐ No ☐ No ☐ No ☐ No ☐ Soli Character changes ☐ Litter and debris ☐ Left: ☐ 0-	type  None  Unknown  Sinuction: 20  6-12  ank Wranty change Bent vegetation Sedi Leaf  2	Perennial (Flow Seasonal (Contour Seasonal (Contour Seasonal (Contour Seasonal (Flow Seasonal (F	ws year round) tinuous flow ≥ 3 months) bws <3 months) bws only in response to	it crosses CL:E (N, NE, E, SE, S, SW, W, NW)  Meandering E AT CROSSING  8



#### Feature ID #: S8ADA001

Date: 6/3/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 166.11						
<b>QUALITATIVE AT</b>	TRIBUTES						
Water Appearance (check all that apply)	Clear ☐       Turbid ☐       Sheen on surface ☐       Floating algal mats ☐       Water Color:         Slightly Turbid ☒       Very Turbid ☐       Greenish color ☐       Obvious surface scum ☐       SLIGHTLY BROWN         Other:						
Stream Substrate %	Silts 50% Cobbles Bedrock Sands Gravel Concrete Muck Vegetation: Other: X Explain: CLAY 50						
Aquatic Habitats (check all that apply)	Sand Bar  Gravel Riffles  In-stream emergent plants: BLUNT SPIKE RUSH Gravel Bar  Beep Pools  In-stream submerged plants: Bank root systems Fringing Wetlands: PEM WEST OF ALIGNMENT Undercut Banks Overhanging trees/shrubs						
Aquatic Organisms Observed (check all that apply)	Waterfowl Fish (adult) Turtles Other:  Snakes Fish (juvenile) Frogs HEARD  HEARD  FROGS  Invertebrates:						
Riparian Zone	Width of natural vegetation zone from edge of active channel out onto flood plain (FT): MIDDLE OF RANGELAND   Circle vegetative layers: trees						
Tributary Is	Natural □Artificial (Man-Made) □Manipulated						
Channel Condition:	Channelization Unnatural straightening Downcutting Dikes/Berms ☐ Excessive bank or Braiding ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐						
Disturbances	Livestock access to riparian zone RANGELAND MANURE EVIDENT IN FIELD AROUND STREAM Waste discharge pipes present  Other: IN SURROUNDING FIELD						
Describe Habitat Characteristics, Aquatic & Terrestrial Diversity: Habitat ID No.: APPEARS TO PROVIDE HABITAT FOR FROGS, BUT LITTLE TO NO DIVERSITY							
	crossing angle, construction constraints, erosion potential, existing disturbances, and meanders)						
STREAM QUALITY Hi	gh 🗌 Moderate 🛛 Low 🔲						

#### ENSR

1601 Prospect Parkway Ft. Collins, CO 80525



# Waterbody Data Form

Feature ID: S23DA001
YELLOWSTONE RIVER

		Road	lity 🗌 Other				
Date: 2008/10/07	Client/Project Name: Ke	Milepost Enter/Exit: 195.92					
Team: 23	State/County: MT - FA			Quad Name: Ma <b>rsh SW</b>			
Logbook No.:	Logbook Page No.: 73		Photo: S23DA001_S.jpg				
Drawing (Please p	rovide orientation arrow, all feat	ures identified, location to cent	erline, etc.)				
			Sea Meol				
Waterbody Type:	Lake Pond B	orrow Pit 🔽 Stream 🗀	Ag. Ditch	er			
Stream Flow:	☐ Fast	Slow Very Slow					
Subsurface Flow:		nknown					
Flow Type:	✓ Perennial (Flows year) Seasonal (Continuous)	to arrest	ntermittent (Flows	<3 month			
Direction of Fiow: N NE E SE S SW W NW							
OHWM Width (ft.)	: 800						
Sinuosity:	☐ Braided ☐ M	leandering  Straigl	nt 🗆 N/A				
Stream Width (ft.)	: 800	Water Surface (A	t Crossing Location	300			
Stream Depth (ft.)		3-6	24-36 🗌 36-4				
OHWM indicators		la manual and a ma		Name of the state			
	RAL LINE ON BANK						
SHELVING	DTINO						
SEDIMENT SO SEDIMENT DE							
LITTER AND D							
	Left: 0-2	2-4 4-6 🗸 6-8	8÷				
Bank Height (ft.): ooking Downstrea	cm)		<b>№</b> 8+				
Bank Siope:		2-4					
(Looking Downstre	am)	3:1	☐ Vertical				
	Right: 4:1	3:1	✓ Vertical				

**ENSR** 1601 Prospect Parkway Ft. Collins, CO 80525

<b>Qualitative Attribu</b>	tes			
Water Appearance:				
☐ Clear	☐ Turbid	☐ Sheen on Surfac	☐ Floating Algalmats	
☐ Slightly Turbid	☐ Very Turbid	☐ Greenish Color	Obvious Surface Scum	
Water Color:			Other:	
Stream Substrate %:				
20% SILT				
40% COB				
40% GRA	VEL			
Aquatic Habitats:				
☐ Sand Bar	Gravel Riffle		Emergent Plant % Cover: 10	)
✓ Gravel Bar	Deep Pools		Submerged Plant % Cover: 0	
☐ Mud Bar	Bank Root Syster		etlands Characteristics:	
☐ Undercut Banks	Overhanging Tree	es/Shrubs		
Aquatic Organisms Ot	served:			
☐ Waterfowl	☐ Fish (Adult)	☐ Turtles	☐ Other:	
☐ Snakes	☐ Fish (Juvenile)	☐ Frogs		
☐ Invertebrate				
Riparian Zone:				
Width of Natural Ve	egetation Zone from Ed	ge of Active Channel out	onto Flood Plain (ft): 100	
Vegetative Layers:	☐ Herbs ☐ Shrubs	☐ Trees		
1	Areas Within Riparian	Zone	Non-Buffered Concentrated Flo	ws
Tributary Condition:	✓ Natural	Artificial (Man-Made)	Manipulated	
Channel Condition:	✓ Channelization/Bra	iding Unnatural St	raightening	
	☐ Dikes/Berms	☐ Excessive B	• • •	
Disturbances:	✓ Livestock Access t	hamana -	nure In Stream or On Banks	
	☐ Waste Discharge F	· house	indie in Stream of On Banks	
	Other:	ripes Present		
	U Other.			
1	s, Aquatic, and Terrestrial I	Diversity Description:		
Habitat ID Number:				
			ILVER SAGEBRUSH. LEFT BA	NK FLOODPLAIN
CHARACTERIZED	BY OLD COTTONWO	ODS AND WILLOWS		
Comments:				
WILL TRIGGER PO	CN			

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#### **ENSR**

1601 Prospect Parkway Ft. Collins, CO 80525

Our	litative	Attri	hutae
UUd	iilalive	MILLI	Dutes

Water Appearance:			//		
☐ Clear	☐ Turbid	☐ Sheen on Surfac	☐ Floating Algalmats		
☐ Slightly Turbid	☐ Very Turbid	☐ Greenish Color	☐ Obvious Surface Scum		
Water Color:			☐ Other:		
Stream Substrate %:			3		
60% SILTS					
20% COB					
20% GRA	/EL				
Aquatic Habitats:					
✓ Sand Bar	☐ Gravel Riffle		Emergent Plant % Cover: 20		
☐ Gravel Bar	✓ Deep Pools		Submerged Plant % Cover: 5		
☐ Mud Bar			etlands Characteristics:		
☐ Undercut Banks	Overhanging Tree	es/Shrubs			
Aquatic Organisms Ob		700 1700 170 170 170 170 170 170 170 170			
☐ Waterfowl	☐ Fish (Adult)	☐ Turtles	✓ Other: NONE OBSERVED		
☐ Snakes	☐ Fish (Juvenile)	☐ Frogs			
☐ Invertebrate					
Riparian Zone:					
Width of Natural Ve	getation Zone from Ed	ge of Active Channel out	onto Flood Plain (ft) 100		
Vegetative Layers:	☐ Herbs ☐ Shrubs	☐ Tree			
☐ Significant Bare	Areas Within Riparian 2	Zone	Non-Buffered Concentrated Flows		
Tributary Condition:	Natural      □	Artificial (Man-Made)	Manipulated		
Channel Condition:	✓ Channelization/Bra				
-	☐ Dikes/Berms	☐ Excessive B			
Disturbances:	✓ Livestock Access to	o Riparian Zone ☐ Ma	anure In Stream or On Banks		
☐ Waste Discharge Pipes Present					
	Other:				
	44				
Habitat Characteristics	, Aquatic, and Terrestrial [	Diversity Description:			
	TTONWOODS AND S	ILVER SAGEBRUSH ON	N RIGHT FLOODPLAIN, LEFT FLOODPLAIN HAS		
l	TTONWOODS IN FAF				
Comments:					
	E WELL VEGETATED	. PIPELINE CROSSES A	T APPROXIMATELY 90 DEGREE ANGLE		
Stream Quality:	Uia □ Madarata □	7104			
	Hig ☐ Moderate ☐	LOW			
·					

# **Waterbody Data Form**

# SIDOVAOII - Stream East Fork Cherry Creek

Centerline Re-Route Access Road Ancillary Fa	acility 🖾 Transmission Line 🖸 Other
Centerline ID: 3/26/10	Project Designated Name: Revisione XL - Phase IX
Date: 7/7/10 Client/Project Name: Trans Carada	-Trow-KXL Milepost Enter/Exit: 271
Team: B106. State/County: MT- Val	ley Quad Name: NA
Logbook No.: 2 Logbook Page No.: — Tract No.: 729	N, R40E, Secal
Drawing (Please provide orientation arrow, all features identified, location to	
N ( mapped as	achannel.
pood the posture	12-4 3: 12-4
500'	Downstream, SW
Waterbody Type: Lake Pond Borrow Pit Stream	Downstream, SW  B Ag. Ditch Dother
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit   Stream	
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very Flow Type: ☐ Perennial (Flows year round)	☐ Ag. Ditch ☐ Other  Slow ☑ None ☐ Intermittent (Flows <3 month
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very Flow Type: ☐ Perennial (Flows year round)	☐ Ag. Ditch ☐ Other Slow ☑ None
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit 🗡 Stream  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very  Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months)	Ag. Ditch Other  Slow None  Intermittent (Flows <3 month Ephemeral (Flows only in response to rainfall)
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit 🗡 Stream  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very  Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: ☐ N ☐ NE ☐ E ☐ SE ☐ S  OHWM Width (ft.): 🌫 📜	Ag. Ditch Other  Slow None  Intermittent (Flows <3 month Ephemeral (Flows only in response to rainfall)
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit 🗡 Stream  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very  Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: ☐ N ☐ NE ☐ E ☐ SE ☐ S  OHWM Width (ft.): — 3  Sinuosity: ☐ Braided ☐ Meandering ☐ S	Ag. Ditch Other  Slow None Intermittent (Flows <3 month None  Ephemeral (Flows only in response to rainfall)  SW W NW No Flow  traight N/A
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit 🗡 Stream  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very  Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: ☐ N ☐ NE ☐ E ☐ SE ☐ S  OHWM Width (ft.): ☐ Sinuosity: ☐ Braided ☐ Meandering ☐ S  Stream Width (ft.): ToB≈10 ☐ Water Surfi	Ag. Ditch Other  Slow None Intermittent (Flows <3 month Ephemeral (Flows only in response to rainfall)  SW W NW No Flow  traight
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S  OHWM Width (ft.): Sinuosity: Braided Meandering S  Stream Width (ft.): ToB≥10  Stream Depth (ft.): Mo 1-3 3-6 6-12 12	Ag. Ditch Other  Slow None  Intermittent (Flows <3 month  Ephemeral (Flows only in response to rainfall)  SW W NW No Flow  traight N/A  ace (At Crossing Location)
Waterbody Type: □ Lake □ Pond □ Borrow Pit A Stream  Stream Flow: □ Fast □ Moderate □ Slow □ Very  Flow Type: □ Perennial (Flows year round) □ Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: □ N □ NE □ E □ SE □ S  OHWM Width (ft.): □ NE □ E □ SE □ S  Sinuosity: □ Braided ★ Meandering □ S  Stream Width (ft.): To S ~ 10 □ 1-3 □ 3-6 □ 6-12 □ 12  OHWM Indicators: ★ Left: □ 0-2 ★ 2-4 □ 4-6 □ 6	Ag. Ditch Other  Slow None  Intermittent (Flows <3 month Ephemeral (Flows only in response to rainfall)  SW W NW No Flow  traight N/A  ace (At Crossing Location)  18 2 18-24 2 24-36 36-48 48-60 60+
Waterbody Type: □ Lake □ Pond □ Borrow Pit 🗡 Stream  Stream Flow: □ Fast □ Moderate □ Slow □ Very  Flow Type: □ Perennial (Flows year round) □ Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: □ N □ NE □ E □ SE □ S  OHWM Width (ft.): □ NE □ E □ SE □ S  Sinuosity: □ Braided ☑ Meandering □ S  Stream Width (ft.): □ NE □ NE □ SE □ S  Stream Width (ft.): □ NE □ NE □ SE □ S  OHWM Indicators: □ Stream Depth (ft.): □ NE □ NE □ SE □ S  OHWM Indicators: □ Sept Veg , Score  OHWM Indicators: □ Sept Veg , Score  OHWM Indicators: □ Stream	Ag. Ditch Other  Slow None  Intermittent (Flows <3 month Ephemeral (Flows only in response to rainfall)  SW W NW No Flow  traight N/A ace (At Crossing Location)  18 18-24 24-36 36-48 48-60 60+
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit  Stream  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very  Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: ☐ N ☐ NE ☐ E ☐ SE ☐ S  OHWM Width (ft.):	Ag. Ditch Other  Slow None  Intermittent (Flows <3 month Ephemeral (Flows only in response to rainfall)  SW W NW No Flow  traight N/A  ace (At Crossing Location)  18 18-24 24-36 36-48 48-60 60+  8+  8+

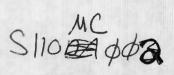
Tomments: Willow Kottonwood, Sager, wheatgross, brome, alfolfo

\* Book Road King does not have a culvert to allow water flow

stream Quality: | High | Moderate & Low - No H2O, Road King, cattle.

Stream Quality:

# Waterbody Data Form



☐ Centerline ☐ Re-Route ☐ Access Road ☐ Anci	llary Facility Transmission Line Dother Buttle Revort
Centerline ID: 3/26/10	Project Designated Name: Keysdore XL Phase IV
Date: 1 Client/Project Name:	Milepost Enter/Exit:
	rada-Trow ≈115.9
Team: B110 State/County: MT-	McCore Quad Name: NA
Logbook No.: 1 Logbook Page No.: 38 Tract No.:	L-MT-MC-00265
Drawing (Please provide orientation arrow, all features identified, loc	
A 1 50	o' up'ar 'dn
	Tephonos Vert 1
(E) pas	ture   Pownstream
Waterbody Type: Lake Pond Borrow Pit	Stream Ag. Ditch Other
Stream Flow: Fast Moderate Slow	Very Slow None
Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months)	☐ Intermittent (Flows <3 month ☐ None  nths) ★ Ephemeral (Flows only in response to rainfall)
Direction of Flour	S SW W NW NO Flow
OHWM Width (ft.): 21	
Sinuosity: Braided Meandering	Straight N/A
Stream Width (ft.): Tob=10'	ter Surface (At Crossing Location) WWZ1/
	[ 12-18
OHWM Indicators: Bent ves Scour	
Bank Height (ft.): Left: 0-2 2-4 🗶 4-6	□ 6-8 □ 8+
(Looking Downstream) Right: 0-2 2-4 🛛 4-6	□ 6-8 □ 8+
Bank Slope: Left: 4:1 3:1 2:1	1:1 🗷 Vertical
(Looking Downstream) Right: 4:1 3:1 2:1	1:1 🗷 Vertical

Qualitative Attribu	tes .
Water Ap pearance:	
Clear	Turbid Sheen on Surfac Floating Algalmats
Sligh tly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum
No Flow	Other: Brown
Stream Substrate %:	Claus
Aquatic Habitats:	
☐ Sand Bar	Gravel Riffle In-stream Emergent Plant % Cover:
Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plant % Cover:
Mud Bar	Bank Root Systems Fringing Wetlands Characteristics:
Undercut Banks	Overhanging Trees/Shrubs  None
Aquatic Organisms Ob	bserved: NONE
Riparian Zone:	
Width of Natural Ve	egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - /O Right - /O
Vegetative Layers:	Herbs Shrubs Trees Multiple
Significant Bare Are	eas Within Riparian Zone 📋 Yes 📉 No 📋 Unknown
	suffered Concentrated Flows: Yes No Unknown
Tributary Condition:	Natural Artificial (Man-Made) Manipulated
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting
	☐ Dikes/Berms ☐ Excessive Bank Erosion ☑ N/A
Disturbances:	Livestock Access to Riparian Zone Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
HE PROPERTY OF THE PARTY OF THE	Aother: Low Water Crossing
	thouse crossing
Habitat Characteristics	s, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number:	
	MA
Comments: 1	11 0-44 1 1 1 1 1
Wi	thin cattle posture, cattle have degraded
^	
	nel so has low Hoo x-mg.
Jages, Wh	eatgrasses, needl grass, white knowberry.
0 1	
	High Moderate Low



 □ Centerline Re-Route ☐ Access Road ☐ Ancillary Facility Other: Feature ID #: S5AMC001 Stream/Waterbody Name (if known): FIGURE EIGHT CREEK Associated Wetland ID #: Date: 6/11/08 Project Name & No.: Keystone XL-10623-007-803A Milepost: 122.33 Investigators: ROBSON/SMITH State/County: MT/ MCCONE **Quad Name: BOBCAT CREEK** Logbook Page No.: 37 Logbook No.: 1 Tract No.: ML-MT-MC-00340.000 Picture No.: S5AMC001 NE,W2,SW3 PHYSICAL ATTRIBUTES Waterbody Sketch Plan Please include: Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor X-X-XX END Survey corridor 55kmc 001 Angle of Crossing at Centerline: Waterbody Type ☐ Lake ☐ Pond ☐ Borrow Pit River Stream Ag. Ditch Other: Perennial (Flows year round)
Seasonal (Continuous flow ≥ 3
Intermittent (Flows <3 months) Stream Flow Flow Direction of Flow where ☐ Fast ☐ Moderate ☐ Slow Seasonal (Continuous flow ≥ 3 months) it crosses CL: (N. NE. type E, SE, S, SW, W, NW) ☐ Very Slow None Ephemeral (Flows only in response to rainfall) Subsurface Flow? ☐ No ☑ Unknown ☐ Yes OHWM Width (ft.): 2.5 FT Sinuosity ☐ Straight Meandering Meandering Stream Width (ft.) Top of Bank (at crossing location): 3' Water Surface (at crossing location): 1.5 Stream Depth (in.) □ 0-3 ⊠ 3-6 6-12 12-18 □ 18-24 24-36 36-48 48-60 □ 60+ **OHWM Indicator** ☐ Wrack line ☐ Shelving ☐ Scour ☐ Abrupt plant community change ☐ Bent, matted or missing ☐ Wrested vegetation ■ Water staining vegetation ☐ Soil character changes ☐ Sediment deposition ☐ Sediment sorting ☐ Litter and debris ☐ Leaf litter disturbed Other: Bank Height (ft.) Left: □ 0-2 ⊠ 2-4 □ 4-6 6-8 □ 8+ (looking downstream) Right: 0-2 ☑ 2-4 □ 4-6 **6-8** □ 8+ Bank Slope (looking 4:1 3:1 Left: 2:1 1:1 ∨ Vertical downstream) 4:1 2:1 Right: 3:1 □ 1:1 ✓ Vertical



#### Feature ID #: S5AMC001

Date: 6/11/08	08 Project Name & No.: Keystone XL-10623-007-803A				Milepost: 122.3	3	-
QUALITATIVE AT	TRIBUTES						_
Water Appearance (check all that apply)	Clear  Slightly Turbid   Other:	Turbid ⊠ Very Turbid □	Sheen on surface Greenish color	Floating algal Obvious surfa		Water Color: BROWN	
Stream Substrate %	Silts X Concrete Other: CLAY	Cobbles Muck Explain:	Bedrock Vegetation:	Sands	Gravel		
Aquatic Habitats (check all that apply)	Sand Bar  Gravel Bar  Mud Bar  Undercut Banks	Gravel Riffles  Deep Pools  Bank root systems Overhanging trees	In-strea s ☐ Fringing	nm emergent plants: nm submerged plants g Wetlands: ☐			
Aquatic Organisms Observed (check all that apply)	Waterfowl Snakes Invertebrates:	Fish (adult) ☐ Fish (juvenile) ☐	Turtles ☐ Frogs  ⊠	Other:			
Riparian Zone	Circle vegetative la		e of active channel out o ubs ⊠ herbs □ ne	onto flood plain (FT): □Evidence of non-b		d flows	
Tributary is	⊠Natural	☐Artificial (Man-Made	e) 🔲 Manipulat	ed			
Channel Condition:	Channelization or Braiding ☑ Deeply incised	Unnatural straightenin	g Downcutting Di	kes/Berms	Excessive bank erosion	Other	
Disturbances	Livestock access to Waste discharge pi		i	n stream or on banks ONE OBSERVED	s 🗆		
Describe Habitat Char	acteristics Aquatic	& Terrestrial Diversi	fv:	Habitat ID	No:		
WOODY VEGETAT							
Comments (e.g. pipeline APPROXIMATELY	crossing angle, cor 45 DEGREES	struction constraints	, erosion potential, ex	isting disturbances	, and meanders)		
STREAM QUALITY Hi	igh 🔲	Moderate		Low	$\boxtimes$		

☑ Centerline ☐ Re	e-Route	Road	y Facility	Other:	Feature ID #	#: S5AVA0	)4	
Stream/Waterbody Name (if known): BRUSH FORK								
Associated Wetland ID #:								
Date: 6/15/08         Project Name & No.: Keystone XL-10623-007-803A         Milepost: 51.12								
Investigators: R	OBSON/SMITH	State/Cou	inty: MT/	VALLEY		Quad Na	me: TAMPIC	O NE
Logbook No.: 1	Logbook Pa	ge No.: 55	Tract N	lo.: ML-MT-VA	-00321.000	Picture No	D.: S5AVA004_	E,W2,N3
PHYSICAL ATTR								
	Waterbody Sketch Plan Please include: Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations							
and Survey cor		Th Arrow, Cen	teriine, Le	ngth of reature	e, Distances i	rom Cente	Mine, Prioto	Location
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4 4 4 00000								
Angle of Gross	ing at Centerline:							
Waterbody Type	☐ Lake ☐ Pond	☐ Borrow Pit	River	☐ Stream ☐	Ag. Ditch C	other:		
Stream Flow	☐ Fast       Moder	rate	Flow	Perennial (Flo	ws year round) ntinuous flow ≥ 3 n	nonthe)	Direction of Flo it crosses CL:	
	T Van Slaw	□ None	type	Intermittent (FI)	ows <3 months)	•	E, SE, S, SW,	
Subsurface Flow?	☐ Very Slow	☐ None ☑ Unknown		☐ Ephemeral (Floration rainfall)	ows only in respor	nse to		
	☐ Yes —	⊠ UHKHOWH						
OHWM Width (ft.):	3-5'		Sinuosity	Straight		⊠ Mean	dering	
Stream Width (ft.)	Top of Bank (at cross				at crossing location	,		
Stream Depth (in.)	0-3 3-6	☑ 6-12	12-		☐ 24-36	□ 36-48	48-60	□ 60+
OHWM Indicator	☑ Clear natural line		☐ Wrack line		Shelving		Scour	
	Abrupt plant comr	,	vegetation	ted or missing	☐ Wrested vege		☐ Water staini	ing
	Soil character cha	_	Sediment	•	☐ Sediment sort	ting		
	Litter and debris		Leaf litter		Other:			
Bank Height (ft.) (looking downstream)	Left:	0-2	₫ 2-4	☐ 4-6	L	] 6-8	□ 8+	
	Right: [	□ 0-2	₫ 2-4	<b>4-6</b>		] 6-8	□ 8+	<u></u>
Controllers (looking	1 -4.	7 4.4	70.4	П 2.4	<u> </u>	3 3 3		
Bank Slope (looking fownstream)	Left: [	4:1	3:1	□ 2:1	12	1:1	☐ Vertical	l
	Right: [	<b>4:1</b>	₫ 3:1	2:1		] 1:1	☐ Vertical	



### Feature ID #: S5AVA004

Date: 6/15/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 51.12							
QUALITATIVE A	TRIBUTES							
Water Appearance (check all that apply)	Clear  Slightly Turbid  Other:	Turbid ⊠ Very Turbid □	Sheen on surface  Greenish color	Floating algal ma Obvious surface		Water Color: LT. BROWN		
Stream Substrate %	Silts X Concrete Other: CLAY	Cobbles Muck Explain:	Bedrock Vegetation:	Sands	Gravel			
Aquatic Habitats (check all that apply)	Sand Bar  Gravel Bar  Mud Bar  Undercut Banks	Gravel Riffles  Deep Pools  Bank root system Overhanging tree	In-stream ns ☑ Fringing	n emergent plants: ☐ n submerged plants: ☐ Wetlands: ☐				
Aquatic Organisms Observed (check ali that apply)	Waterfowl Snakes Invertebrates:	Fish (adult) ☐ Fish (juvenile) ☐	Turtles ☐ Frogs ☒ Heard not seen	Other:				
Riparian Zone	Circle vegetative la	Width of natural vegetation zone from edge of active channel out onto flood plain (FT):  Circle vegetative layers: trees ☐ shrubs ☒ herbs ☐ <i>Silver sag</i> e, <i>wild rose</i> ☐ Significant bare areas within riparian zone ☐ Evidence of non-buffered concentrated flows						
Tributary is	⊠Natural	☐Artificial (Man-Mac						
Channel Condition:	Channelization or Braiding ☐	Unnatural straighten	ing Downcutting Dike		Excessive bank erosion	Other		
Disturbances	Livestock access to Waste discharge pi		Manure in Other:	stream or on banks ∑	3			
Describe Habitat Char	actoristics Aquatic	& Torrostrial Divors	Situr	Habitat ID No	\ •			
Describe Habitat Characteristics, Aquatic & Terrestrial Diversity:  VERY LITTLE AQUATIC VEGETATION. SOME JUNCUS ALONG LEFT BANK NEAR CL- 0-3' WIDE STRIP FOR ABOUT 50' IN LENGTH. NO WOODY VEGETATION ADJACENT TO BANKS. WILD ROSE AND SILVER SAGE ON SLOPES ON EITHER SIDE OF STREAM								
			ts, erosion potential, exis					
STREAM QUALITY H	igh 🔲	Moderate	: 🔲	Low	$\boxtimes$			

 □ Centerline ☐ Re-Route ☐ Access Road ☐ Ancillary Facility Other: Feature ID #: S7AMC002 Stream/Waterbody Name (if known): UT TO STRUPLE COULEE Associated Wetland ID #: W7AMC002 Date: 6/7/08 Project Name & No.: Keystone XL-10623-007-803A Milepost: 93.58 Investigators: 7A State/County: MT/ MC **Quad Name: BOBCAT CREEK** Logbook No.: 1 Logbook Page No.: 21 Tract No.: ML-MT-MC-00040.000 Picture No.: S7AMC002 N.S.E PHYSICAL ATTRIBUTES Waterbody Sketch Plan Please include: Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor فصية Angle of Crossing at Centerline: NOT CLOSSING C Waterbody Type ☐ Lake Pond ☐ Borrow Pit River Ag. Ditch Other: Stream Flow Flow Perennial (Flows year round) Direction of Flow where ☐ Fast ☐ Moderate ☐ Slow Seasonal (Continuous flow ≥ 3 months) it crosses CL: (N, NE, type Intermittent (Flows <3 months) E, SE, S, SW, W, NW) ✓ Very Slow ☐ None Ephemeral (Flows only in response to DOES NOT CROSS Subsurface Flow? ☐ No Unknown ☐ Yes OHWM Width (ft.): Sinuosity ☐ Straight Meandering Stream Width (ft.) Top of Bank (at crossing location): 6 Water Surface (at crossing location): 3 Stream Depth (in.) ⊠ 0-3 3-6 ☐ 6-12 12-18 18-24 24-36 □ 36-48 □ 48-60 □ 60+ OHWM Indicator Clear natural line on bank ☐ Wrack line ☐ Shelving ☐ Scour ☐ Bent, matted or missing Abrupt plant community change ☐ Wrested vegetation ■ Water staining vegetation ☐ Soil character changes ☐ Sediment deposition ☐ Sediment sorting ☐ Litter and debris ☐ Leaf litter disturbed Other: Bank Height (ft.) Left: 0-2 ⊠ 2-4 4-6 6-8 □ 8+ (looking downstream) 0-2 Right: **⊠** 2-4 □ 4-6 □ 6-8 □ 8+ Bank Slope (looking Left: 4:1 ☑ 3:1 2:1 1:1 ☐ Vertical downstream) Right: 4:1 □ 3:1 ☑ 2:1 □ 1:1 ☐ Vertical

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☑ Centerline ☐ Re	e-Route	☐ Access Road	☐ Ancillar	y Facility 【	Other:	Feature ID	: S7AMC0	04	
Stream/Waterbod	ly Name	e (if known): UN	KNOWN			A	147 (F	· 22 A.E.A.	
Date: 6/7/08		Project Name	& No.: Keys	stone XL-1	0623-007-803	Associated A	Milepost		
Investigators: 7	A	-	State/Cou	inty: MT/ N	IC		Quad Na	me: BOBCAT	CREEK
Logbook No.: 1	L	ogbook Page N	o.: 28	Tract No	o.: ML-MT-MC	C-00055.000	Picture N	o.: S7AMC004	SW,S,SE
PHYSICAL ATTR	RIBUTE	S							
Waterbody Sket									
Please include: D Survey corridor	irection	ial & North Arrov	w, Centerlin	e, Length o	of feature, Dist	tances from Ce	enterline, Pl	noto Locatio	ns, and
Survey contact				15				N-	
1 T			1 Transaction	4116	\				2
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	L_	***************************************		///					
Angle of Crossin	on at Co	enterline: 90	30						
Angle of Clossif	ig at Ci	enternine.				100			
Waterbody Type	Lak	e Pond [	Borrow Pit	River	⊠ Stream	Ag. Ditch	Other:		
Stream Flow	Fas	t	Slow	Flow	☐ Perennial (Flo	ows year round) entinuous flow ≥ 3 r	months)	Direction of F	
	☑ Ven	y Slow	☐ None		☐ Intermittent (F	lows <3 months)	•	NE, E, SE, S, NW)	
Subsurface Flow?	☐ Yes	□No	☑ Unknown		rainfall)	, ,		,	
OHWM Width (ft.):	6'			Sinuosity	☐ Straigh	ht	⊠ Mear	oderina	
Stream Width (ft.)		Bank (at crossing lo	cation): 8'	Ciridosity		(at crossing location		idening	
Stream Depth (in.)	0-3		6-12	<b>12-1</b>		24-36	36-48	<b>48-60</b>	□ 60+
OHWM Indicator		ar natural line on ba		☐ Wrack line		☐ Shelving	□ 00·40	Scour	
	1	upt plant community		☐ Bent, matte		☐ Wrested vege	atation	☐ Water stai	nina
		, .	,	vegetation	•	_		☐ Water Star	illing
	J	character changes		Sediment		☐ Sediment sor	ting		
		r and debris		Leaf litter o		Other:			
Bank Height (ft.) (looking downstream)	Le	ft: 🛛 0-2		] 2-4	<b>□</b> 4-6		<b>]</b> 6-8	□ 8+	
	Rig	ght: 🛛 0-2		] 2-4	□ 4-6		6-8	□ 8+	
Bank Slope (looking	Le	ft:		] 3:1	☑ 2:1		] 1:1	☐ Vertic	al
downstream)									
	Rig	ght: 4:1		3:1	☑ 2:1		] 1:1	☐ Vertic	al



### Feature ID #: S7AMC004

Date: 6/7/08	Project Name & No.: Keystone XL-10623-007-	-803A Milepost: 94.60
QUALITATIVE AT	TRIBUTES	
Water Appearance (check all that apply)	Clear ☑ Turbid ☐ Sheen on surfa Slightly Turbid ☐ Very Turbid ☐ Greenish color	
	Other: SOME ALGAL GROWTH	
Stream Substrate %	Other: Explain:	rock Sands Gravel 5% etation:
Aquatic Habitats (check all that apply)	Gravel Bar Deep Pools D	In-stream emergent plants:  In-stream submerged plants:  Fringing Wetlands:
Aquatic Organisms Observed (check ali that apply)	Waterfowl	
Riparian Zone	Width of natural vegetation zone from edge of active chanr Circle vegetative layers: trees ☑ shrubs ☑ herbs ☑ □Significant bare areas within riparian zone	
Tributary is	· · · · · · · · · · · · · · · · · · ·	anipulated
Channel Condition:	Channelization Unnatural straightening Downcutting or Braiding	ng Dikes/Berms
Disturbances		Manure in stream or on banks ⊠ Other: HEAVY TRAMPLING IN CREEK
Describe Habitat Char	acteristics, Aquatic & Terrestrial Diversity:	Habitat ID No.:
MODERATE HIGH	HABITAT QUALITY	
Comments (e.g. pipeline	crossing angle, construction constraints, erosion poten	ntial cyleting disturbance and magnifical
STREAM QUALITY HI	gh 🗌 Moderate 🛛	Low



☑ Centerline ☐ R	Re-Route	☐ Access Roa	ad 🔲 Ancilla	ary Facility	Other:	Feature ID	#: S7AMC	005	
Stream/Waterbod	dy Nam	e (if known): U	NKNOWN						
Date: 6/7/08		Project Name	e & No.: Ke	vstone XL-	10623-007-80	Associated	Milepos		
Investigators: 7	'Δ			unty: MT/N		J3A			
		ble Dama						ame: BOBCA	
Logbook No.: 1 PHYSICAL ATTR		ogbook Page	No.: 31	Iractin	10.: ML-M1-N	MC-00060.000	Picture N	lo.: S7AMC005	_S,SE,E
Waterbody Sket									
Please include: D Survey corridor			ow, Centerli	ne, Length	of feature, Di	istances from Co	enterline, P	hoto Location	ıs, and
T		erings and effective productions.			(3			. 7	2
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					160	7			
<u></u>	<u></u>		-			-		William .	
Angle of Crossi	ng at C	enterline:	70.						
			AMAN PERFERENCE MARRIEDEN MANAGES						
Waterbody Type	Lak	e Pond	☐ Borrow Pit	River	⊠ Stream	☐ Ag. Ditch	Other:		
Stream Flow	Fas	t	☐ Slow	Flow type	Seasonal (C	(Flows year round) Continuous flow ≥ 3	months)	Direction of Fluit crosses CL:I	NE (N,
	☐ Ver	y Slow	None     Non	- · · · · · · · · · · · · · · · · · · ·	☐ Ephemeral	: (Flows <3 months) (Flows only in respo	nse to	NE, E, SE, S, NW)	SW, W,
Subsurface Flow?	☐ Yes	□No	☑ Unknown		rainfall)				
OHWM Width (ft.):	3'			Sinuosity	☐ Strai	ight	Mear	ndering	
Stream Width (ft.)	Top of	Bank (at crossing	location): 3'		Water Surfac	ce (at crossing location	on): NA		
Stream Depth (in.)	☑ 0-3	□ 3-6	6-12	<b>12-</b> 1	18 🔲 18-24	24-36	□ 36-48	□ 48-60	□ 60+
OHWM Indicator	Clea	ar natural line on b	ank	☐ Wrack line	)	☐ Shelving		Scour	
	☐ Abr	upt plant communi	ty change		ted or missing	☐ Wrested vege	etation	☐ Water stain	ning
	☐ Soil	character change	s	vegetation  Sediment	deposition	☐ Sediment sor	ting		
	□ Litte	er and debris		☐ Leaf litter	disturbed	Other:	J		
Bank Height (ft.) (looking downstream)	Le	ft: 🛛 🗘 0-	-2	□ 2-4	□ 4-6	5	<b></b> 6-8	□ 8+	
	Riç	ght: 🛛 0-	·2 [	2-4	□ 4-6	) [	□ 6-8	□ 8+	****
Bank Slope (looking downstream)	Let	ft: 4:	:1	☑ 3:1	2:1		] 1:1	☐ Vertica	à
	Riç	ght: 4:	:1 [	☑ 3:1	2:1		] 1:1	☐ Vertica	3



#### Feature ID #: S7AMC005

Date: 6/7/08	Project Name & No.: Keystone XL-10623-007-803A	Milepost: 94.83
QUALITATIVE AT	TTRIBUTES	
Water Appearance (check all that apply)	Clear	Floating algal mats ☐ Water Color: Obvious surface scum ☐
Stream Substrate %	Silts Cobbles Bedrock Concrete Muck 100 Vegetation: Other: Explain:	Sands Gravel
Aquatic Habitats (check all that apply)	Gravel Bar Deep Pools In-strea	m emergent plants:  m submerged plants:  g Wetlands:  g
Aquatic Organisms Observed (check all that apply)	Waterfowl Fish (adult) Turtles Snakes Fish (juvenile) Frogs	Other:
Riparian Zone		☐Evidence of non-buffered concentrated flows
Tributary Is	Natural □Artificial (Man-Made) □Manipulate	ed
Channel Condition:	Channelization Unnatural straightening Downcutting Dil or Braiding	kes/Berms
Disturbances	Livestock access to riparian zone ☑ Manure i Waste discharge pipes present ☐ Other:	n stream or on banks ⊠
Describe Habitat Char	racteristics, Aquatic & Terrestrial Diversity:	Habitat ID No.:
	TAT QUALITY, HIGH RIPARIAN, LOW STREAM	Transaction 140.
Comments (e.g. plpeline	e crossing angle, construction constraints, erosion potential, ex	Isting disturbances, and meanders)
STREAM QUALITY H	ligh Moderate	Low

ENSR AECOM

☑ Centerline ☐ R	e-Route	☐ Access Ro	ad 🔲 Ancilla	ary Facility	Other:	Feature ID	#: S7AMC(	008	
Stream/Waterboo	dv Name	(if known): E	FORK PRA	ARIF FLK C	RFFK				
	<b>-</b> , - · · · ·			11 11600 000 000 000 000	1 Now how 1 N	Associated	Wetland I	D #:	
Date: 6/11/08	F	roject Nam	<b>e &amp; No.:</b> Key	ystone XL-1	0623-007-803		Milepost		
Investigators: 7	Α		State/Co	unty: MT/ N	<b>IC</b>		Quad Na	me: PEDIGO	COULEE
Logbook No.: 1		gbook Page	No.:	Tract No	o.: ML-MT-M	C-00400.000	Picture N	o.: S7AMC008	_SW,W,NE
PHYSICAL ATTE									
Waterbody Sket Please include: [		al & North Ar	row Centerl	ine Length	of feature. Dis	stances from C	enterline. F	hoto Location	ne and
Survey corridor	JII 60 (107. 1	II OLINOISITTII	1011, 00	mo, monga.	Of rousing with		ontormis, .	note accuse.	io, una
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CO	)			Span	1/2-9/10	No			
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	-				1-40-	and the second			
Angle of Cross	ing at Ce	enterline:	JO.		•••••				
Waterbody Type	Lake	Pond	☐ Borrow Pit				ther:		
Stream Flow	☐ Fast	☐ Moderate	⊠ Slow		Perennial (FI	ows year round) entinuous flow ≥ 3 n	nonths)	Direction of Flo it crosses CL:N	
	☐ Very S	Slow	☐ None	type	☐ Intermittent (F	Flows <3 months) Tlows only in respon	,	NE, E, SE, S,	
Subsurface Flow?		□ No	Unknown		rainfall)	10M2 OHA III LESPOI	ise to	NW)	
	☐ Yes		Zy Origination.						
OHWM Width (ft.):	20			Sinuosity	☐ Straigl		Mear	ndering	
Stream Width (ft.)		nk (at crossing				(at crossing location	,		
Stream Depth (in.)	0-3	☑ 3-6	6-12	12-18		24-36	□ 36-48	□ 48-60	□ 60+
OHWM Indicator		natural line on b		☐ Wrack line		☐ Shelving		Scour	
	!	t plant communi	,	☐ Bent, matter vegetation	ed or missing	☐ Wrested vege	tation	☐ Water stain	ing
		naracter change	s	☐ Sediment of	•	☐ Sediment sort	ing		
	Litter a	and debris		Leaf litter d	listurbed	Other:			
Bank Height (ft.) (looking downstream)	Left:	O	-2	□ 2-4	□ 4-6	×	6-8	□ 8+	
	Right	: 🗆 0	-2	☑ 2-4	□ 4-6	Ľ	] 6-8	□ 8+	
Bank Slope (looking downstream)	Left:	□ 4	:1 [	3:1	☑ 2:1	L	] 1:1	☐ Vertical	
•	Right	: 🛛 4	:1 [	3:1	□ 2:1		] 1:1	☐ Vertical	

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☑ Centerline ☐ F	Re-Route	☐ Access Road	☐ Ancillar	ry Facility	☐ Oth	ner:	Feature ID	#: S8AFA	.006	
Stream/Waterboo	dy Name	e (if known):	ia.					7.5		
		·				-	Associated	Wetland	ID #:	
Date: 6/15/08		Project Name 8	No.: Keys	stone XL-	-10623	-007-8	303A		st: 258.38	
Investigators: 8		170	State/Cou	•	FALL	ON		Quad N	lame: WEBS	STER NW
Logbook No.: 1		ogbook Page No			No.: M	L-MT-	-FA-00630.000	Picture N	No.: S8AFA006	SW.NE.SE
PHYSICAL ATTI	RIBUTES	S- SLIGHTLY MI	EANDERIN	IG, WITH	IIN ST	REAM	I EMERGENT VE	GETATIO	N	
Waterbody Sket	tch Plan	ገ					Distances from Co			
Survey corridor	<b>₩</b> 11 <b>₩</b> 41	ar or recent and a	7, Oction	ie, Lengar	I UI ICC	Ruie, L	JISTAILCES ITOM C	anterime, i	Photo Locati	ons, and
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Angle of Crossi	ing at C	enterline: 😗 💍	16			2.				
Waterbody Type	Lake	Pond	Borrow Pit	River	⊠ Str			ther:		
Stream Flow	☐ Fast	☐ Moderate	⊠ Slow	Flow	☐ Per	ennial (	(Flows year round) Continuous flow ≥ 3 m	- antha)	Direction of I	
	☐ Very	Slow	None	type	☐ Inte	ermittent	t (Flows <3 months)	•	it crosses CL NE, E, SE, S	
Subsurface Flow?			Unknown		L Eph rainfall	iemerai	(Flows only in respon	se to	NW)	•
	☐ Yes		Unknown							
OHWM Width (ft.):	5'			Sinuosity		☐ Strai	ight	⊠ Mear	ndering	
Stream Width (ft.)		ank (at crossing loca				r Surfac	ce (at crossing location	n): 6		
Stream Depth (in.)	0-3		<b>⊠</b> 6-12	12-1		] 18-24	24-36	□ 36-48	□ 48-60	□ 60+
OHWM Indicator		natural line on bank		☐ Wrack line	e		☐ Shelving		⊠ Scour	
	☐ Abrup	ot plant community ch	-	Bent, matt	ted or m	issing	☐ Wrested veget	ation	☐ Water sta	ining
	1	character changes		Sediment	depositi	ion	☐ Sediment sorti	ng		
	Litter	and debris		Leaf litter o	disturbe	d	Other:			
Bank Height (ft.) (looking downstream)	Left:	⊠ 0-2		2-4		□ 4-6	3 🔲	6-8	□ 8+	
(looking domination,	Right	nt: 🛛 0-2	П	2-4		□ 4-6				
						LJ 4~v	' ب	6-8	□ 8+	
Bank Slope (looking downstream)	Left:	4:1		3:1		☑ 2:1		1:1	☐ Vertic	cal
	Right	t: 4:1		3:1		☑ 2:1		1:1	☐ Vertic	cal

#### Feature ID #: S8AFA006

Date: 6/15/08	Project Name	& No.: Keystone X	Milepost: 25	Milepost: 258.38		
<b>QUALITATIVE AT</b>	TRIBUTES					1
Water Appearance (check all that apply)	Clear  Slightly Turbid  Other:	Turbid ⊠ Very Turbid □	Sheen on surface Greenish color		gal mats 🔲 urface scum 🔲	Water Color: BROWN- RECENT HEAVY RAINS
Stream Substrate %	Silts 20% Concrete Other:	Cobbles Muck Explain:	Bedrock Vegetation	Sands 60 on:	0% Gravel 20%	
Aquatic Habitats (check all that apply)	Sand Bar  Gravel Bar  Mud Bar  Undercut Banks	Gravel Riffles Deep Pools Bank root system Overhanging tree	In-s ns ☐ Frin	tream emergent plan tream submerged pla ging Wetlands: ⊠ W	ants: 🔲	
Aquatic Organisms Observed (check all that apply)	Waterfowl Snakes Invertebrates:	Fish (adult) ☐ Fish (juvenile) ☐	Turtles ☐ Frogs ☐	Other:		
Riparian Zone	Circle vegetative la	getation zone from ed∢ yers: trees ☐ shi areas within riparian zo	rubs 🔲 herbs 🛭 one	EXISTS IN GRAS		ated flows
Tributary Is	⊠Natural	☐Artificial (Man-Mad	le) 🔲 Manip	ulated		
Channel Condition:	Channelization or Braiding	Unnatural straighteni	ng Downcutting	Dikes/Berms 🔲	Excessive bar erosion	k Other
Disturbances	Livestock access to Waste discharge pi	•	Manu Othe	ure in stream or on bar:	anks 🛛	•
Describe Habitat Chara AREA HAS COMBO CREATES A DIVER	OF ABUTTING	WETALND, GRA			ID No.: RGENT VEGETA	ATION, WHICH
Comments (e.g. pipellne 90 DEGREE ANGLE						
STREAM QUALITY Hi	gh 🔲	Moderate	⊠	Low		

⊠ Centerline	e-Route [	_ Access Road	I	ry Facility	Other:	Feature ID	#: S8AFA0	007	
Stream/Waterboo	ly Name (i	fknown): SA	NDSTONE	CREEK					
I Dodge 0/40/00						Associated			
Date: 6/18/08		oject Name				03A 		t: 244.31	
Investigators: 8	Α		State/Cou	unty: MT/F	ALLON		Quad Na	ame: BAKEF	3
Logbook No.: 1		ook Page N	io.: 123-124	Tract N	<b>o.:</b> ML-MT-I	FA-00410.000	Picture N	lo.: S8AFA007	_W1,N2,E3
PHYSICAL ATTR									
Waterbody Sket Please include: 0		& North Arro	w Centerli	ine Length	of feature [	Distances from (	Contorline (	Photo Locatio	ne and
Survey corridor	Directional	4 NOTH AIR	ow, Centern	ine, cengui	or reature, i	Distances nom (	Jentermie, i	Tiolo Localic	oris, ariu
91	a <sup>117</sup>	4		١					
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EXIT									
		C17							
	/	173		1					
4		300'							
Ø			9.0						
Angle of Cross	ing at Cer	terline:	10						
			Discussion of the control of the con	Pilia		A - Missh	AL		
Waterbody Type	Lake	☐ Pond ☐	Borrow Pit	River	⊠ Stream		Other:		
Stream Flow	☐ Fast	☐ Moderate	⊠ Slow	Flow type		Flows year round) Continuous flow ≥ 3	months)	Direction of F it crosses CL:	
	☐ Very Sid	w	□ None	type	☐ Intermittent	(Flows <3 months) (Flows only in response	•	E, SE, S, SW	
Subsurface Flow?			☑ Unknown		rainfall)	(1 lows only in respe	nise to		
	☐ Yes								
OHWM Width (ft.):	12	·, · · · · · · ·		Sinuosity	☐ Stra		☑ Mea	ndering	
Stream Width (ft.)		(at crossing lo		<b>5</b>	1	ce (at crossing locati			
Stream Depth (in.) OHWM Indicator		3-6	6-12	<b>⊠</b> 12-1		24-36	□ 36-48	48-60	□ 60+
Onvivi indicator		itural line on ba		☐ Wrack line		Shelving		Scour	
		lant community	,	vegetation	ed or missing	☐ Wrested veg		☐ Water stail	ning
	☐ Soil cha	racter changes		Sediment	-	☐ Sediment so	rting		
Bank Height (ft.)				Leaf litter		Other:			
(looking downstream)	Left:	0-2	L	] 2-4	☑ 4-6	) [	<b></b> 6-8	□ 8+	
	Right:	0-2		] 2-4	☑ 4-6		6-8	□ 8+	
Bank Slope (looking	Left:	□ 4:1	r	] 3:1	☑ 2:1	ſ	<b></b> 1:1	☐ Vertica	al
downstream)								U vertica	ai
	Right:	□ 4:1		] 3:1	☑ 2:1		<b>]</b> 1:1	☐ Vertica	al



#### Feature ID #: S8AFA007

Date: 6/18/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 244.31						
<b>QUALITATIVE AT</b>	ITRIBUTES						
Water Appearance (check all that apply)	Clear Turbid Sheen on surface Floating algal mats Water Color: Slightly Turbid Very Turbid Greenish color Obvious surface scum BROWN  Other:						
Stream Substrate %	Silts 30% Cobbles Bedrock Sands 30% Gravel Concrete Muck 10% Vegetation: Other: X Explain: 30% CLAY						
Aquatic Habitats (check all that apply)	Sand Bar ☐ Gravel Riffles ☐ In-stream emergent plants: ☑ Gravel Bar ☐ Deep Pools ☐ In-stream submerged plants: ☐ Mud Bar ☐ Bank root systems ☐ Fringing Wetlands: ☐ Undercut Banks ☐ Overhanging trees/shrubs ☐						
Aquatic Organisms Observed (check all that apply)	Waterfowl						
Riparian Zone	Width of natural vegetation zone from edge of active channel out onto flood plain (FT): LOCATED IN GRASSLAND FIELD   Circle vegetative layers: trees						
Tributary Is	□Natural □Artificial (Man-Made) □Manipulated						
Channel Condition:	Channelization Unnatural straightening Downcutting Dikes/Berms						
Disturbances	Livestock access to riparian zone ☑ Manure in stream or on banks ☐ N/A Waste discharge pipes present ☐ Other:						
Describe Habitat Chara	acteristics, Aquatic & Terrestrial Diversity: Habitat ID No.:						
MIXED SAGEBRUS	SH/ GRASSLAND VEG. COMMUNITY BIRDS OBSERVED						
Comments (e.g. nineline	crossing angle, construction constraints, erosion potential, existing disturbances, and meanders)						
PIPELINE CROSSIN	NG ANGLE~ 90 DEGREES, STEEP STREAM BANKS ARE ALREADY SLIGHTLY EROSIONAL						
STREAM QUALITY Hi	igh ☐ Moderate ⊠ Low ☐						

ENSR AECON

☑ Centerline ☐ Re	e-Route	☐ Access F	Road	lary Facility	Other:	Feature ID	#: S9AFA0	103	
Stream/Waterbod	ly Name	(if known):	RED BUTTE			A	al 34/-41l 1	D.#.	
Date: 9/11/08		Project Na	me & No.: Ke	eystone XL-1	10623-007-803	***	Milepost	D#: t: 246.24	
Investigators: R	OB K/	-		state/County: MT/ FA				me: BAKER	
Logbook No.:9A	\-1 Lo	gbook Pag	e No.:25-26	Tract N	lo.: ML-MT-FA	-00440.000	Picture N	lo.: S9AFA003	W.S.E
PHYSICAL ATTR									
Waterbody Sket									
Please include: Dires	ectional 8	North Arrow,	Centerline, Len	gth of feature,	Distances from C	enterline, Photo	Locations, an	1	
Angle of Crossing				—	<b>5</b> 10	7. 0::-	0.1	<u> </u>	
Waterbody Type Stream Flow	Lake	Pond	☐ Borrow P			Ag. Ditch	Other:	Simulation of Ele	
Stream Flow	☐ Fast	Modera	ate 🛛 Slow	Flow type	Perennial (Flo	ntinuous flow ≥ 3	months)	Direction of Flo	<b>W</b> (N, NE,
	☐ Very	/ Slow	☐ None		☐ Intermittent (F☐ Ephemeral (F	lows <3 months) lows only in resp	onse to	E, SE, S, SW,	W, NW)
Subsurface Flow?	☐ Yes	☐ No	☑ Unknow	n	rainfall)				
OHWM Width (ft.):	12			Sinuosity	☐ Straigh	nt	⊠ Mea	ndering	
Stream Width (ft.)	Top of I	Bank (at crossi	ng location): 18		Water Surface	(at crossing loca	tion): 10		
Stream Depth (in.)	□ 0-3	□ 3-6	☐ 6-12	☑ 12-	18 🔲 18-24	24-36	□ 36-48	□ 48-60	□ 60+
OHWM Indicator	☑ Clea	ar natural line o	n bank	☐ Wrack line	е	☐ Shelving		☐ Scour	
	☐ Abru	upt plant comm	unity change	☐ Bent, mat vegetation	ted or missing	☐ Wrested ve	getation	☐ Water stain	ing
	☐ Soil	character char	nges	☐ Sediment	deposition	☐ Sediment so	orting		
	Litte	r and debris		☐ Leaf litter	disturbed	Other:			
Bank Height (ft.) (looking downstream)	Lei	it: 🗆	] 0-2	2-4	□ 4-6		☑ 6-8	□ 8+	
	Rig	ght:	] 0-2	2-4	□ 4-6		⊠ 6-8	□ 8+	
Bank Slope (looking downstream)	Lei	t: E	] 4:1	3:1	☑ 2:1		□ 1:1	☐ Vertica	l
	Rig	ght:	] 4:1	3:1	☑ 2:1		1:1	☐ Vertica	



#### Feature ID #: S9AFA003

Date: 6/11/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 246.24
QUALITATIVE A	
Water Appearance (check all that apply)	Clear ☑ Turbid ☐ Sheen on surface ☐ Floating algal mats ☐ Water Color: Slightly Turbid ☐ Very Turbid ☐ Greenish color ☐ Obvious surface scum ☐  Other:
Stream Substrate %	Silts 10% Cobbles Bedrock Sands Gravel Concrete Muck 90% Vegetation: Other: Explain:
Aquatic Habitats (check all that apply)	Sand Bar
Aquatic Organisms Observed (check all that apply)	Waterfowl Fish (adult) Turtles Other: NONE OBS.  Snakes Fish (juvenile) Frogs Invertebrates:
Riparlan Zone	Width of natural vegetation zone from edge of active channel out onto flood plain (FT): 100  Circle vegetative layers: trees ☐ shrubs ☐ herbs ☒ ☐Significant bare areas within riparian zone ☐Evidence of non-buffered concentrated flows
Tributary is	⊠Natural □Artificial (Man-Made) □Manipulated
Channel Condition:	Channelization Unnatural straightening Downcutting Dikes/Berms ☐ Excessive bank or Braiding ☑ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
Disturbances	Livestock access to riparian zone   Manure in stream or on banks   Other: N/A
Describe Habitat Char	racteristics, Aquatic & Terrestrial Diversity: Habitat ID No.:
	O WITHIN RANGELAND WITH LIVE STOCK ACCESS ATED IN GRASSES
Comments (e.g. pipeline	e crossing angle, construction constraints, erosion potential, existing disturbances, and meanders)
STREAM QUALITY H	igh ☐ Moderate⊠ LIVESTOCK ACCESS Low ☐

ENSR AECOM

Centerline   Re-Route   Access Road   Ancillary Facility   Other: Feature ID #: S14MC001									
Stream/Waterbod	ly Name (if	known): JOGʻ	VENSEN	COULEE					
						Associated			
Date: 8/8/08					10623-007-803	ЗА	Milepost		
Investigators: SI	WARTZINSKI	1 !	State/Cou	nty: MT/	MCCONE		Quad Na	me: BOBCAT CR	EEK
Logbook No.: 1		ook Page No		Tract N	lo.: ML-MT-M	C-00070.000	Picture No	o.: S14MC001_N	N,E,S
PHYSICAL ATTR									
Waterbody Sket		North Arrow	Conterlin	- Longth	-ffastura Dic	' from Co	'd' Dh	1 1	
Please include: D Survey corridor	AI CUIOnai G	i NOILII AITOW,	Centerna	e, Lengui	of feature, Dis	tances from Ce	interline, mi	ioto Locations, a	ind
Survey corridor		_	Leep	ch.A	- 1	Listan			
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Angle of Crossii Waterbody Type			Borrow Pit	River	☐ Stream	The Disab	W		
Stream Flow							Other:		
Stream Flow	☐ Fast [	☐ Moderate	Slow	Flow type	Perennial (Floridae) Seasonal (Co	ontinuous flow ≥ 3 n	nonths)	Direction of Flow w it crosses CL: S (N	, NE,
	☐ Very Slow	N 🗵	None		☐ Intermittent (Flows <3 months) E, SE, S, SW, W Ephemeral (Flows only in response to				4W)
Subsurface Flow?	☐ Yes [	□ No 🛛	Unknown		rainfall)				
OHWM Width (ft.):	8			Sinuosity	Straigh	ht	⊠ Mean	dering	
Stream Width (ft.)		(at crossing locat			Water Surface	(at crossing locatio	n):		
Stream Depth (in.)	☑ 0-3	3-6 [	6-12	<b>12-</b> 1	18 🔲 18-24	24-36	□ 36-48	48-60	60+
OHWM Indicator		tural line on bank	Ĺ	☐ Wrack line	е	Shelving		Scour	
	☐ Abrupt pla	Abrupt plant community change			☐ Bent, matted or missing ☐ Wrested v			☐ Water staining	
☐ Soil character changes				vegetation ☐ Sediment deposition		☐ Sediment sorting			
	☐ Litter and debris			Leaf litter	disturbed	Other:			
Bank Height (ft.) (looking downstream)	Left:	0-2		2-4	☑ 4-6		] 6-8	□ 8+	
,	Right:	0-2		] 2-4	☑ 4-6	Ε	] 6-8	□ 8+	
Park Clans (looking	l offi	K71 4.4							
Bank Slope (looking downstream)	Left:	☑ 4:1	L	] 3:1	2:1	L.	] 1:1	☐ Vertical	
	Right:	☑ 4:1		3:1	2:1		] 1:1	☐ Vertical	



#### Feature ID #: S14MC001

Date: 8/8/08	Project Name & No.: Keystone XL-10623-007-803A	Milepost: 95.27		
QUALITATIVE AT	TRIBUTES			
Water Appearance (check all that apply)	Clear Turbid Sheen on surface Floating algal Slightly Turbid Very Turbid Greenish color Obvious surface  Other: NO FLOW			
Stream Substrate %	Silts Cobbles Bedrock Sands Concrete Muck Vegetation: Other: 100 Explain: CLAY	Gravel		
Aquatic Habitats (check all that apply)	Sand Bar ☐ Gravel Riffles ☐ In-stream emergent plants: ☐ Gravel Bar ☐ Deep Pools ☐ In-stream submerged plants Mud Bar ☐ Bank root systems ☒ Fringing Wetlands: ☐ Undercut Banks ☒ Overhanging trees/shrubs ☒			
Aquatic Organisms Observed (check all that apply)	Waterfowl			
Riparian Zone	<u> </u>	50 uffered concentrated flows NO		
Tributary Is	□Natural □Artificial (Man-Made) □Manipulated			
Channel Condition:	Channelization Unnatural straightening Downcutting Dikes/Berms  or Braiding	Excessive bank erosion  Other		
Disturbances	Livestock access to riparian zone ⊠ Manure in stream or on banks Waste discharge pipes present □ Other:	; 🛮		
Describe Habitat Char	acteristics, Aquatic & Terrestrial Diversity: Habitat ID	No ·		
RIPARIAN ZONE C JUNIPER, SILVER S	ONSISTS OF GREEN ASH, SERVICE BERRY, SNOW BERRY, CHOK SAGE BRUSH, WESTERN WHEAT GRASS, LITTLE BLUESTEM, MAN , GNAT CATCHER, DOVES, SHARP-TAIL GROUSE. DEER ALSO PR	KE CHERRY, BUFFALO BERRY NY SONG BIRDS OBSERVED,		
Comments (e.g. pipeline	crossing angle, construction constraints, erosion potential, existing disturbances,	, and meanders)		
STREAM QUALITY HI	gh 🛛 Moderate 🗌 Low			

ENSR AECOM

Stream/Waterboo			Anciliary Facility	☐ Other:	Feature ID #	: S14MC00	3	
Date: 8/8/08		•		10000 007 00	Associated	Married World Co., in such as not	the state of the s	
		oject Name & No		3A	Milepost: 105.28			
Investigators: s	WARTZINSKI 	/GINSBERG Sta	te/County: MT	/ MCCONE		Quad Nam	1e: PASTUR	E CREEK
Logbook No.: 1		ook Page No.:	Tract	No.: ML-MT-M	IC-00158.000	Picture No.	: S14MC003	_E,S,W
PHYSICAL ATTE								
Waterbody Sket Please include: D Survey corridor Survey corridor		North Arrow, Ce	enterline, Lengt	h of feature, Dis	stances from Cer	nterline, Pho	oto Location	ns, and
Angle of Crossii Waterbody Type	Canso W	N K	W Silver	M V W	Siver Suse by			Tiso
Stream Flow	1	Moderate	Slow Flow type	Perennial (F	☐ Ag. Ditch Ot  lows year round) ontinuous flow ≥ 3 m Flows <3 months) Flows only in response	onths) i	Direction of Fl t crosses CL: E, SE, S, SW,	W (N, NE,
Subsurface Flow?		No ⊠Uni		rainfall)	i iowa oniy in reapons	oe to		
OHWM Width (ft.):	7		Sinuosity	/ Straig	jht	Meande     Me	ering	
Stream Width (ft.)	Top of Bank	(at crossing location)	: 12	Water Surface	(at crossing location	): NO FLOW		
Stream Depth (in.)	<b>⊠</b> 0-3 [	3-6 6	-12 🔲 12	2-18 🔲 18-24	□ 24-36	□ 36-48 [	<b>48-60</b>	□ 60+
OHWM Indicator	☑ Clear nat	ural line on bank	☐ Wrack li	ne	☐ Shelving		Scour	
	☐ Abrupt pl	ant community chang		☑ Bent, matted or missing ☐ Wrested ve			☐ Water stain	ning
	☐ Soil chara	acter changes	vegetation  Sedime	nt deposition	☐ Sediment sorting			
	☐ Litter and debris			r disturbed	Other:			
Bank Height (ft.) looking downstream)	Left:	☑ 0-2	□ 2-4	□ 4-6		6-8	□ 8+	
	Right:	☑ 0-2	□ 2-4	4-6		6-8	□ 8+	
Bank Slope (looking downstream)	Left:	4:1	□ 3:1	⊠ 2:1		1:1	☐ Vertica	ıl
	Right:	4:1	3:1	☑ 2:1		1:1	☐ Vertica	il



#### Feature ID #: S14MC003

Date: 8/8/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 105.28
QUALITATIVE AT	TRIBUTES
Water Appearance (check all that apply)	Clear Turbid Sheen on surface Floating algal mats Water Color: Slightly Turbid Very Turbid Greenish color Obvious surface scum Other: NO FLOW
Stream Substrate %	Silts Cobbles Bedrock Sands Gravel Concrete Muck Vegetation: Other: 100 Explain: CLAY
Aquatic Habitats (check all that apply)	Sand Bar
Aquatic Organisms Observed (check all that apply)	Waterfowl Fish (adult) Turtles Other:  Snakes Fish (juvenile) Frogs  Invertebrates:
Riparian Zone	Width of natural vegetation zone from edge of active channel out onto flood plain (FT): 30  Circle vegetative layers: trees ☐ shrubs ☒ herbs ☒  ☐Significant bare areas within riparian zone NO ☐Evidence of non-buffered concentrated flows NO
Tributary is	⊠Natural ☐Artificial (Man-Made) ☐Manipulated
Channel Condition:	Channelization Unnatural straightening Downcutting Dikes/Berms Excessive bank Other or Braiding erosion
Disturbances	Livestock access to riparian zone ☑ Manure in stream or on banks ☑ Other:
Describe Habitat Char	acteristics, Aquatic & Terrestrial Diversity: Habitat ID No.:
RIPARIAN ZONE C ECHNIUACEA, ROS	ONSISTS OF SILVER SAGEBRUSH, BUFFALO GRASS, BLUE GRAMA, WESTERN WHEAT GRASS SA SIP, FOX TAIL BARLEY, RUMEX, AND GUMWEED. CHANNEL IS HEADWATERS OF BEAR LOW. BERMED AREA ABOVE (NE) OF ROW WITH A SMALL POND
Comments (e.g. pipeline	crossing angle, construction constraints, erosion potential, existing disturbances, and meanders)
STREAM QUALITY Hi	gh



 □ Centerline ☐ Re-Route ☐ Access Road ☐ Ancillary Facility Other: Feature ID #: S14PR001 Stream/Waterbody Name (if known): Hay Creek Associated Wetland ID #: Date: 8/13/2008 Project Name & No.: Keystone XL-10623-007-803A Milepost: 209.04 Investigators: Swartzinki, Ginsberg State/County: MT/Prairie Quad Name: Mildred NE Logbook No.: 1 Logbook Page No.: 48-49 Tract No: ML-MT-PR-Picture No.: S14PR001 S, E, NE 00115.000 PHYSICAL ATTRIBUTES Waterbody Sketch Plan Please include: Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor Survey corridos 150 8 E SUFT waster ? Angle of Crossing at Centerline: Waterbody Type ☐ Lake ☐ Pond ☐ Borrow Pit River Ag. Ditch Other: Stream Flow Perennial (Flows year round) Direction of Flow Flow ☐ Fast ☐ Moderate ☐ Slow Seasonal (Continuous flow ≥ 3 months) where it crosses type Intermittent (Flows <3 months) CL: ☐ Very Slow None Ephemeral (Flows only in response to rainfall) North Subsurface Flow? ☐ No ☑ Unknown ☐ Yes OHWM Width (ft.): Sinuosity Straight Meandering X Stream Width (ft.) Top of Bank (at crossing location): 80 FT Water Surface (at crossing location): No flow 0-3 Stream Depth (in.) 3-6 6-12 12-18 18-24 24-36 36-48 48-60 🔲 60+ 🗆 **OHWM Indicator** Clear natural line on bank Wrack line Shelving Scour | Abrupt plant community change Bent, matted or missing vegetation Wrested vegetation Water staining Soil character changes Sediment deposition Sediment sorting Litter and debris Leaf litter disturbed Other: Bank Height (ft.) Left: 0-2 2-4 4-6 6-8 8+ 🗵 (looking downstream) 0-2 Right: 2-4 4-6 6-8 8+ 🖂 Bank Slope (looking Left: 4:1 3:1 2:1 1:1 Vertical lownstream) Right: 4:1 🛛 2:1 3:1 1:1 Vertical



# Feature ID #: S14PR001

Date: 8/13/2008	Project Name	& No.: Keystone X	L-10623-007-803A	Milepost: 209.04				
QUALITATIVE AT	TRIBUTES				- I		-(	
Water Appearance (check all that apply)	Clear  Slightly Turbid  Other: NO FLOW	Turbid  Very Turbid	Sheen on surface  Greenish color	Floating algal r Obvious surfac	mats 🔲 Note scum 🔲	Water Color:		
Stream Substrate %	Silts Concrete Other: CLAY	Cobbles Muck Explain:100%	Bedrock Vegetation:	Sands	Gravel			
Aquatic Habitats (check all that apply)	Sand Bar  Gravel Bar  Mud Bar  Undercut Banks	Gravel Riffles  Deep Pools  Bank root system Overhanging tree	In-strea s ⊠ Fringing	m emergent plants: [ m submerged plants: g Wetlands: ☐				
Aquatic Organisms Observed (check all that apply)	Waterfowi  Snakes  Invertebrates:	Fish (adult) ☐ Fish (juvenile) ☐	Turtles ☐ Frogs ☐	Other:				
Riparian Zone	Width of natural vegetation zone from edge of active channel out onto flood plain (FT): 200FT  Circle vegetative layers: trees ☐ shrubs ☒ herbs ☒  ☐Significant bare areas within riparian zone ☐Evidence of non-buffered concentrated flows							
Tributary is		☐Artificial (Man-Mad		∍d				
Channel Condition:	Channelization or Braiding	Unnatural straighteni	ng Downcutting Dil	kes/Berms 🔲	Excessive bank erosion	Other		
Disturbances	Livestock access to Waste discharge pip		Manure i Other:	n stream or on banks				
Describe Habitat Chara Salt leaches evident sagebrush, snowbern Comments (e.g. pipeline	within stream chary, crested wheat	annel with Junevi grass, western w	s spp. Cover throug heatgrass.		parian zone con	sists of silver		
STREAM QUALITY Hig	gh 🔲	Moderate	×	Low				

#### WATERBODY DATA FORM

ENSR AECOM

 □ Centerline Re-Route ☐ Access Road ☐ Ancillary Facility Other: Feature ID #: S14VA002 Stream/Waterbody Name (if known): BEAR CREEK Associated Wetland ID #: Date: 8/6/08 Project Name & No.: Keystone XL-10623-007-803A Milepost: 52.30 Investigators: SWARTZINSKI/ State/County: MT/ VALLEY Quad Name: TAMPICO NE Logbook No.: 1 Logbook Page No.: 10-11 Tract No.: ML-MT-VA-00335.000 Picture No.:S14VA002 NE.SE.SW PHYSICAL ATTRIBUTES Waterbody Sketch Plan Please include: Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor Survey corridor Angle of Crossing at Centerline: Waterbody Type Lake Pond ☐ Borrow Pit River X Stream Ag. Ditch Other: Stream Flow Flow Perennial (Flows year round) Direction of Flow where ☐ Fast ☐ Moderate ☐ Slow Seasonal (Continuous flow ≥ 3 months) it crosses CL:SW (N, type ☐ Intermittent (Flows <3 months) NE, E, SE, S, SW, W, ☐ Very Slow ⊠ None Ephemeral (Flows only in response to rainfall) Subsurface Flow? ☐ No ☑ Unknown ☐ Yes OHWM Width (ft.): Sinuosity ☐ Straight Stream Width (ft.) Top of Bank (at crossing location): 80FT Water Surface (at crossing location): NO FLOW Stream Depth (in.) **⊠** 0-3 3-6 6-12 12-18 18-24 24-36 □ 36-48 **48-60** □ 60+ **OHWM Indicator** Clear natural line on bank ☐ Wrack line ☐ Shelving X Scour ☐ Bent, matted or missing ☐ Abrupt plant community change ☐ Wrested vegetation ☐ Water staining vegetation ☐ Soil character changes ☐ Sediment sorting ☐ Litter and debris ☐ Leaf litter disturbed Other: Bank Height (ft.) Left: X 2-4 0-2 □ 4-6 □ 6-8 □ 8+ (looking downstream) Right: 0-2 X 2-4 ☐ 4-6 □ 6-8 □ 8+ Bank Slope (looking Left: 4:1 3:1 2:1 1:1 ✓ Vertical downstream) Right: 4:1 3:1 2:1 □ 1:1 ✓ Vertical



### Page 2 of 2

### Feature ID #: S14VA002

Date: 8/6/08	Project Name	& No.: Keystone X	L-10623-007-803	3A	Milepost: 52.30	
QUALITATIVE AT	TRIBUTES					
Water Appearance (check all that apply)	Clear Slightly Turbid Other: NO FLOW	Turbid [] Very Turbid []	Sheen on surface [ Greenish color		lgal mats  urface scum	Water Color:
Stream Substrate %	Silts Concrete Other: 50 Explai	Cobbles 20 Muck n: CLAY	Bedrock Vegetatio	Sands on:	Gravel 30	
Aquatic Habitats (check all that apply)	Sand Bar ☐ Gravel Bar ☒ Mud Bar ☐ Undercut Banks ☒	Gravel Riffles  Deep Pools  Bank root system Overhanging tree	In-s s ⊠ Frin s/shrubs □	tream emergent plar tream submerged pla ging Wetlands: ☐	nts: ☑ SEE BLOW IN ants: □	HABITAT CHAR.
Aquatic Organisms Observed (check all that apply)	Waterfowl  Snakes  Invertebrates:	Fish (adult) ☐ Fish (juvenile) ☐	Turtles  Frogs	Other:		
Riparian Zone	Circle vegetative la	jetation zone from edg ∕ers: trees ⊠ shr ireas within riparian zo	ubs 🛛 herbs 🖾		T): 150FT on-buffered concentrate	ed flows NO
Tributary is	□Natural	☐Artificial (Man-Mad		<del></del>		
Channel Condition:	Channelization or Braiding	Unnatural straightenii	ng Downcutting	Dikes/Berms	Excessive bank erosion	Other
Disturbances	Livestock access to Waste discharge pip		Manu Other	re in stream or on ba	anks 🗌	
Describe Habitat Char	acteristics Aquatic	& Terrestrial Divers	itv·	Habitat	t ID No.:	
RANGELAND RIPA COTTONWOOD. W PLANTS WITHIN S' SPARTUMA, COCK	RIAN ZONE WIT ITHIN CHANNEL TREAM CHANNE	H SILVER SAGE . EMERGENT PL/ :L INDICATE SEA	& WESTERN WI ANTS INCLUDE ASONAL FLOW.	HEAT GRASS A SMARTWEED,	ND SCATTERED CAREX, CATTAIL	
Comments (e.g. plpeline	crossing angle, con	struction constraints	s, erosion potentlal,	existing disturban	ces, and meanders)	
STREAM QUALITY Hi	gh 🛛	Moderate		Low		

#### WATERBODY DATA FORM



 □ Re-Route ☐ Access Road ☐ Ancillary Facility Other: Feature ID #: S14VA003 Stream/Waterbody Name (if known): UNGER COULEE Associated Wetland ID #: Date: 8/6/08 Project Name & No.: Keystone XL-10623-007-803A Milepost: 53.32 Investigators: SWARTZWINSKI/ State/County: MT/ VALLEY **Quad Name: TAMPICO NE** GINSBERG Logbook Page No.: 10-1 Tract No.: VA355 Logbook No.: 1 Picture No.: \$14VA003 SE,S,NW PHYSICAL ATTRIBUTES Waterbody Sketch Plan Please include: Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor Survey corridor 0 Angle of Crossing at Centerline: Waterbody Type ☐ Lake Pond Borrow Pit ☐ River Ag. Ditch Other: Perennial (Flows year round) Stream Flow Flow Direction of Flow where ☐ Fast ☐ Moderate ☐ Slow Seasonal (Continuous flow ≥ 3 months) it crosses CL:S (N, NE, type ☑ Intermittent (Flows <3 months) E, SE, S, SW, W, NW) ☐ Very Slow None ☐ Ephemeral (Flows only in response to rainfall) Subsurface Flow? ☑ Unknown ☐ No ☐ Yes OHWM Width (ft.): Sinuosity ☐ Straight Stream Width (ft.) Top of Bank (at crossing location): 25 Water Surface (at crossing location): NO FLOW 6-12 **⊠** 0-3 12-18 □ 60+ Stream Depth (in.) □ 3-6 18-24 24-36 □ 36-48 48-60 **OHWM Indicator** Clear natural line on bank ☐ Wrack line ☐ Shelving ⊠ Scour ☐ Abrupt plant community change Bent, matted or missing ☐ Wrested vegetation ■ Water staining vegetation ☐ Soil character changes Sediment deposition Litter and debris Leaf litter disturbed Other: Bank Height (ft.) Left: 0-2 ⊠ 2-4 □ 4-6 6-8 □ 8+ (looking downstream) Right: 0-2 □ 2-4 ☐ 4-6 □ 6-8 □ 8+ Bank Slope (looking Left: 4:1 3:1 2:1 1:1 ✓ Vertical downstream) Right: **4:1** 3:1 2:1 1:1 ✓ Vertical



### Page 2 of 2

### Feature ID #: S14VA003

Date: 8/6/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 53.32
QUALITATIVE AT	TTRIBUTES
Water Appearance (check ail that apply)	Clear Turbid Sheen on surface Floating algal mats Water Color: Slightly Turbid Very Turbid Greenish color Obvious surface scum  Other: NO FLOW
	-
Stream Substrate %	Silts Cobbles 20 Bedrock Sands Gravel 30 Concrete Muck Vegetation:
	Other: 50 Explain: CLAY
Aquatic Habitats (check all that apply)	Sand Bar ☐ Gravel Riffles ☐ In-stream emergent plants: ☐ Gravel Bar ☒ Deep Pools ☐ In-stream submerged plants: ☐ Mud Bar ☐ Bank root systems ☒ Fringing Wetlands: ☐ Undercut Banks ☒ Overhanging trees/shrubs ☐
Aquatic Organisms Observed (check all that apply)	Waterfowl   Fish (adult)   Turtles   Other:   Snakes   Fish (juvenile)   Frogs     Invertebrates:
Riparian Zone	Width of natural vegetation zone from edge of active channel out onto flood plain (FT): 200 FT     Circle vegetative layers: trees
Tributary Is	⊠Natural □Artificial (Man-Made) □Manipulated
Channel Condition:	Channelization Unnatural straightening Downcutting Dikes/Berms
Disturbances	Livestock access to riparian zone   Waste discharge pipes present   Other:
Describe Habitat Char	acteristics, Aquatic & Terrestrial Diversity: Habitat iD No.:
RANGELAND/ GRA	SSLAND RIPARIAN ZONE WITH SCATTERED PLAINS COTTONWOOD, BUFFALO BERRY, PEACH VER SAGEBRUSH & WESTERN WHEATGRASS. COCKLEBUR AND BURDOCK OBSERVED IN
Comments (e.g. pipeline	crossing angle, construction constraints, erosion potential, existing disturbances, and meanders)
STREAM QUALITY Hi	gh 🛛 Moderate 🗌 Low 🗍

# WATERBODY DATA FORM

ENSR AECOM

☑ Centerline ☐ R	e-Route	lary Facility [	Other:	Feature ID #	: S14VA004	ļ.	
Stream/Waterhoo	y Name (if known): BUGGY CRE	EK					
Oliodill/ Tratologo	y Mario (ii Miowii). DOGG i Gill			Associated \	Netland ID	<b>#</b> ·	
Date: 8/6/08	Project Name & No.: Ke	ystone XL-10	0623-007-803		Milepost:		
Investigators: St	NARTZINSKI/ GINSBERG   State/Co	ounty: MT/ V	ALLEY		•	ne: TAMPICO	O NE
Logbook No.: 1	Logbook Page No.: 13-14	Tract No	o.: VA-370.000	) I	Picture No.	: S14VA004	NES
PHYSICAL ATTR							
Waterbody Sket	ch Plan						
Please include: D	irectional & North Arrow, Centerl	ine, Length o	of feature, Dist	tances from Cer	nterline, Pho	oto Locations	, and
Survey corridor					-		
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100	100	***************************************					
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\ \	YY!	1	1	***************************************	V		*
Annia Af Crossi	na at Cantadina	N F	100 FF				
Angle of Crossi	ng at Centerline:					`	
Waterbody Type	☐ Lake ☐ Pond ☐ Borrow Pi				her:		
Stream Flow	☐ Fast ☐ Moderate ☐ Slow	type		ntinuous flow ≥ 3 m	onths) i	Direction of Flow it crosses CL: <b>S</b>	(N, NE,
	☐ Very Slow ☑ None		Ephemeral (F	Flows <3 months) lows only in respons		E, SE, S, SW, V	V, NW)
Subsurface Flow?	Yes No Unknown	) .:	rainfall)				
OHWM Width (ft.):	20	Sinuosity	☐ Straigh	nt	⊠ Meande	ering	
Stream Width (ft.)	Top of Bank (at crossing location): 200		Water Surface	(at crossing location	): NO FLOW		
Stream Depth (in.)	☑ 0-3 ☐ 3-6 ☐ 6-12	□ 12-18	18-24	□ 24-36	□ 36-48	□ 48-60	□ 60+
OHWM Indicator	□ Clear natural line on bank	Wrack line		☐ Shelving		Scour	
	Abrupt plant community change	⊠ Bent, matter     vegetation	ed or missing	☐ Wrested vegeta	ation	☐ Water stainin	ng
	☐ Soil character changes	Sediment d	leposition	☐ Sediment sortin	ng		
	☐ Litter and debris	Leaf litter d	isturbed	☐ Other:			
Bank Height (ft.)	Left: □ 0-2	⊠ 2-4	4-6		6-8	□ 8+	
(looking downstream)	Right: 0-2	☑ 2-4	□ 4-6		^ 0	По.	
	Night 0-2	Ø 4-4	<b>□</b> *-0	ت -	6-8	□ 8+	
Bank Slope (looking downstream)	Left: 🔀 4:1	□ 3:1	2:1		1:1	☐ Vertical	
,	Right: 🛛 4:1	3:1	2:1		1:1	☐ Vertical	



### Page 2 of 2

### Feature ID #: S14VA004

Date: 8/6/08	Project Name	& No.: Keystone X	L-10623-00 <b>7-</b> 803	4	Milepost: 55.25	
QUALITATIVE AT	TRIBUTES					
Water Appearance (check all that apply)	Clear  Slightly Turbid  Other: NO FLOW	Turbid ☐ Very Turbid ☐	Sheen on surface  Greenish color		gal mats 🔲 Irface scum 🔲	Water Color:
Stream Substrate %	Silts Concrete Other: 40 Expl	Cobbles 30 Muck ain: CLAY/SILT	Bedrock Vegetation	Sands i:	Gravel	
Aquatic Habitats (check all that apply)	Sand Bar ☐ Gravel Bar ☒ Mud Bar ☐ Undercut Banks ☒	Gravel Riffles  Deep Pools  Bank root system Overhanging tree	In-str s ⊠ Fring s/shrubs ⊠	eam emergent plant eam submerged pla ing Wetlands:		
Aquatic Organisms Observed (check ail that apply)	Waterfowl  Snakes  Invertebrates:	Fish (adult) ☐ Fish (juvenile) ☐	Turtles  Frogs	Other: PORCU SONGBIRDS	PINES, DEER	
Riparian Zone	Circle vegetative lay ☐Significant bare a	vers: trees ⊠ shr ireas within riparian zo		□Evidence of nor	T): 200FT n-buffered concentrate	d flows NO
Tributary is	⊠Natural	☐Artificial (Man-Mad		<del> </del>		
Channel Condition:	Channelization or Braiding	Unnatural straightenir	ng Downcutting I	Dikes/Berms ☐	Excessive bank erosion	Other
Disturbances	Livestock access to Waste discharge pip		Manur Other:	e in stream or on ba	nks 🖾	
Describe Habitat Char	acteristics Aquatic	& Terrestrial Diversi	itv	Habitat	ID No :	
RIPARIAN HABITAT UNDERSTORYOF S CONSISTS OF IN S BURDOCK AND CO	TINCLUDES MAI SILVER SAGEBR TREAM PLANTS	NY LARGE PLAIN SUSH AND BUFFA	IS COTTONWOO ALO BERRY, WE	D, PEACH LEA STERN WHEAT	F WILLOWS AND GRASS. STREA	M CHANNEL
Comments (e.g. pipeline	crossing angle, con	struction constraints	s, erosion potential, e	existing disturband	es, and meanders)	
STREAM QUALITY Hi	gh 🗵	Moderate		Low		

# WATERBODY DATA FORM

☑ Centerline ☐ Re	e-Route	d	/ ☐ Other:	Feature ID #: \$	S14VA005	
Stream/Waterbod	y Name (if known): AL	KALAI CREEK				
C				Associated W		
Date: 8/7/08		& No.: Keystone >			Milepost: 56.95	
Investigators: 14		State/County: M			Quad Name: CORNV RESERVOIR	
Logbook No.: 1	Logbook Page N	No.: 16-17 Trac	ct No.: ML-MT-VA	A-00385.000 P	icture No.: S14VA00	5_SW,NE,SE
PHYSICAL ATTR						
Waterbody Skete Please include: D Survey corridor	<b>ch Plan</b> irectional & North Arro	w, Centerline, Len	gth of feature, Dis	tances from Cente	erline, Photo Location	ons, and
mus Flat	ng at Centerline:	4 D 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Ash Tark	5	N / 150	
Waterbody Type	☐ Lake ☐ Pond	☐ Borrow Pit ☐ Riv	ver 🛛 Stream [	☐ Ag. Ditch Othe	er:	
Stream Flow	☐ Fast ☐ Moderate	□ Slow Flow		lows year round) ontinuous flow ≥ 3 mor		Flow where CL: <b>S</b> (N, NE,
	☐ Very Slow	⊠ None type	☐ Intermittent (F ☑ Ephemeral (F	Flows <3 months) Flows only in response	E, SE, S, S	W, W, NW)
Subsurface Flow?	☐ Yes ☐ No	☑ Unknown	rainfall)			
OHWM Width (ft.):	6	Sinuo	sity	ht	Meandering	
Stream Width (ft.)	Top of Bank (at crossing le	ocation): 8	Water Surface	(at crossing location):	: NO FLOW	
Stream Depth (in.)	☑ 0-3 ☐ 3-6	☐ 6-12 ☐	12-18 🔲 18-24	☐ 24-36 <b>[</b>	36-48 48-60	□ 60+
OHWM Indicator	☑ Clear natural line on ba	ank 🔲 Wrac	k line	Shelving	Scour	
	☐ Abrupt plant communit		matted or missing	☑ Wrested vegetat	tion	aining
	☐ Soil character changes	vegetations ☐ Sedin	on ment deposition	☐ Sediment sorting	3	
	Litter and debris		litter disturbed	Other:	•	
Bank Height (ft.) (looking downstream)	Left: 0-:	2 🛭 🖾 2-4	□ 4-6	□ 6	S-8	
	Right: 0-2	2 🛭 🖾 2-4	□ 4-6	□ 6	S-8	
Bank Slope (looking downstream)	Left: 4:	1 3:1	2:1		l:1 ⊠ Vert	tical
,	Right: 4:	1 3:1	2:1	1	l:1 🛛 Vert	ical



### Page 2 of 2

### Feature ID #: S14VA005

Date: 8/7/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 56.95			5		
QUALITATIVE AT	TRIBUTES					(
Water Appearance (check all that apply)	Clear Slightly Turbid Other: NO FLOW	· –	Sheen on surface  Greenish color	Floating algal m Obvious surface		Water Color:
Stream Substrate %	Silts Concrete Other: 100 E	Cobbles Muck explain: CLAY	Bedrock Vegetation:	Sands	Gravel	
Aquatic Habitats (check all that apply)	Sand Bar  Gravel Bar  Mud Bar  Undercut Banks	Gravel Riffles ☐ Deep Pools ☐ Bank root system ✓ Overhanging tree	In-strea ns ⊠ Fringing	m emergent plants: m submerged plants: g Wetlands:		
Aquatic Organisms Observed (check all that apply)	Waterfowl Snakes Invertebrates:	Fish (adult) ☐ Fish (juvenile) ☐	Turtles	Other:		
Riparian Zone	Circle vegetative	-	ge of active channel out o rubs ⊠ herbs ⊠ one	onto flood plain (FT): 5		d flows
Tributary is	⊠Natural	☐Artificial (Man-Mad	e) 🔲 Manipulate	∍d		
Channel Condition:	Channelization or Braiding	Unnatural straightenii	ng Downcutting Di	kes/Berms 🔲	Excessive bank erosion	Other
Disturbances	Livestock access Waste discharge	to riparian zone ⊠ pipes present □	Manure i Other:	n stream or on banks		
Describe Habitat Char	actoristics Aquati	c & Terrestrial Divers	itv	Habitat ID N	lo:	
RANGELAND/ GRA STREAM PLANTS I EVIDENT. MUD FLA	SSLAND RIPAI NCLUDE JUNC	RIAN ZONE CONS CUS, COCKLEBUR,	IŜTING OF SILVER , AND BURDOCK. L	SAGEBRUSH, W IVESTOCK ACC	VESTERN WH	
Comments (e.g. pipeline	crossing angle, co	onstruction constraints	s, erosion potential, ex	sting disturbances.	and meanders)	
	The second se					
STREAM QUALITY H	gh 🔲	Moderate		Low	×	

#### WATERBODY DATA FORM

☑ Centerline ☐ Re-Route ☐ Access Road ☐ Ancillary Facility Other: Feature ID #: S14VA006 Stream/Waterbody Name (if known): WINE GRASS COULEE Associated Wetland ID #: Date: 8/7/08 Project Name & No.: Keystone XL-10623-007-803A Milepost: 59.31 Investigators: SWARTZINSKI/ GINSBERG State/County: MT/ VALLEY Quad Name: CHAPMAN COULEE Logbook No.: 1 Logbook Page No.: Tract No.: ML-MT-VA-00430.000 Picture No.: S14VA006 N.S.E PHYSICAL ATTRIBUTES Waterbody Sketch Plan Please include: Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor 150 150 **Angle of Crossing at Centerline:** Waterbody Type ☐ Lake ☐ Pond ☐ Borrow Pit River ☐ Stream Ag. Ditch Other: Stream Flow Perennial (Flows year round) Flow Direction of Flow where ☐ Fast ☐ Moderate ☐ Slow ☐ Seasonal (Continuous flow ≥ 3 months) it crosses CL: S (N, NE, type ☐ Intermittent (Flows <3 months)</p> E, SE, S, SW, W, NW) ☐ Very Slow None
 Non Ephemeral (Flows only in response to rainfall) Subsurface Flow? ☐ No ☑ Unknown ☐ Yes OHWM Width (ft.): Sinuosity ☐ Straight Stream Width (ft.) Top of Bank (at crossing location); 9 Water Surface (at crossing location): NO FLOW Stream Depth (in.) **⊠** 0-3 □ 3-6 6-12 12-18 18-24 24-36 36-48 48-60 □ 60+ **OHWM Indicator** Clear natural line on bank ☐ Wrack line ☐ Shelving ⊠ Scour ☐ Abrupt plant community change Bent, matted or missing ☐ Wrested vegetation ■ Water staining vegetation ☐ Soil character changes ☐ Sediment deposition ☐ Sediment sorting ☐ Litter and debris ☐ Leaf litter disturbed Other: Bank Height (ft.) Left: ⊠ 0-2 2-4 4-6 □ 6-8 □ 8+ (looking downstream) Right: ⊠ 0-2 2-4 ☐ 4-6 □ 6-8 □ 8+ Bank Slope (looking Left: 4:1 3:1 2:1 X 1:1 ☐ Vertical downstream) Right: 4:1 3:1 2:1 X 1:1 ☐ Vertical



### Page 2 of 2

### Feature ID #: S14VA006

Date: 8/7/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 59.31		
<b>QUALITATIVE AT</b>	TRIBUTES		
Water Appearance (check all that apply)	Clear Turbid Sheen on surface Floating algal mats Water Color: Slightly Turbid Very Turbid Greenish color Obvious surface scum  Other: NO FLOW		
Stream Substrate %	Silts Cobbles Bedrock Sands Gravel Concrete Muck Vegetation: Other: CLAY Explain: 100%		
Aquatic Habitats (check aii that apply)	Sand Bar		
Aquatic Organisms Observed (check all that apply)	Waterfowl Fish (adult) Turtles Other:  Snakes Fish (juvenile) Frogs  Invertebrates:		
Riparian Zone	Width of natural vegetation zone from edge of active channel out onto flood plain (FT): 200FT  Circle vegetative layers: trees ☑ shrubs ☐ herbs ☑  ☐Significant bare areas within riparian zone NO ☐ Evidence of non-buffered concentrated flows NO		
Tributary is	⊠Natural □Artificial (Man-Made) □Manipulated		
Channel Condition:	Channelization Unnatural straightening Downcutting Dikes/Berms		
Disturbances	Livestock access to riparian zone   Manure in stream or on banks   Other:		
Describe Habitat Chara	acteristics, Aquatic & Terrestrial Diversity: Habitat ID No.:		
	SH RIPARIAN ZONE WITH WESTERN WHEATGRASS, RABBIBRUSH. IN STREAM PLANTS N WHEATGRASS, COCKLEBUR & BURDOCK, CRESTED WHEATGRASS		
Comments (e.g. pipeline	crossing angle, construction constraints, erosion potential, existing disturbances, and meanders)		
STREAM QUALITY His	gh 🗌 Moderate 🛛 Low 🔲		

# WATERBODY DATA FORM

ENSR AECOM

⊠ Centerline ∐ R	e-Route	d ∐ Ancillary	Facility	☐ Other:	Feature ID #	f: S14VA0	07	
Stream/Waterbook	y Name (if known): SF	RING CREE	K					
					Associated	Wetland II	D #:	
<b>Date:</b> 8/7/08	Project Name	& No.: Keys	tone XL-1	0623-007-803	BA	Milepost	: 59.82	
Investigators: S	WARTZINSKI/ GINSBERG	State/Cour	nty: MT/ \	/ALLEY		Quad Na	me: CHAPMAN	COULEE
Logbook No.: 1	Logbook Page I	No.:	Tract N	o.: ML-MT-VA	A-00430.000	Picture No.:	S14VA007_S,SE	,NW
PHYSICAL ATTR					·			
Waterbody Sket								
Survey corridor	irectional & North Arro	w, Centerline	e, Length	of feature, Dis	tances from Ce	nterline, Pl	noto Locations	, and
ourvey corridor							٨	1
150 F	N. D.	8		1 ,			1	`N
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,		4	0		Deothowood	POS	a spp.	
water	×5 11	1	0	-1	2	500	in pend	X
Alkalai	SV VI	A	0000		1	)		87
mozi.			~ (	K In	40		balon.	
		/ \	50	1	1	- A	kalon Floris	5
		/ >	0	2		N	we.	
	ng at Centerline:	T. 5						
Waterbody Type	☐ Lake ☐ Pond	☐ Borrow Pit	River			ther:		
Stream Flow	☐ Fast ☐ Moderate	☐ Slow	Flow	Perennial (Fl	ows year round) entinuous flow ≥ 3 n	nonths)	Direction of Flor it crosses CL:S	
	☐ Very Slow	⊠ None	type	Intermittent (F	Flows <3 months)	,	E, SE, S, SW, V	
Subsurface Flow?				rainfall)	lows only in respor	ise to		
Subsurface Flow?	☐ Yes ☐ No	☑ Unknown						
OHWM Width (ft.):	9		Sinuosity	☐ Straigh	nt	Mear	ndering	
Stream Width (ft.)	Top of Bank (at crossing lo	cation): 12		Water Surface	(at crossing locatio	n):		
Stream Depth (in.)	<b>□</b> 0-3 <b>□</b> 3-6	☐ 6-12	12-1	8 🔲 18-24	☐ 24-36	□ 36-48	48-60	□ 60+
OHWM Indicator	□ Clear natural line on ba	nk [	] Wrack line		☐ Shelving		⊠ Scour	
	☐ Abrupt plant community	-	Bent, matt	ed or missing	☐ Wrested vege	tation	☐ Water staining	ng
	☐ Soil character changes		Sediment	deposition	☐ Sediment sort	ing		
	☐ Litter and debris		] Leaf litter	disturbed	Other:			
Bank Height (ft.)	Left: 🛛 0-2		2-4	□ 4-6		] 6-8	□ 8+	
(looking downstream)	Right: 🛛 0-2	) <u>[-1</u>	2-4		Port	100		
	Night. 🔼 0-2	. ⊔	∠ <del>-4</del>	4-6	L	] 6-8	□ 8+	
Bank Slope (looking	Left: 4:1		3:1	2:1	×	1:1	☐ Vertical	
downstream)	Right: 4:1		2.1	□ 2.4	K	1 4.4		
	right. 4:1	L	3:1	□ 2:1	×	1:1	☐ Vertical	



### Page 2 of 2

### Feature ID #: S14VA007

Date: 8/7/08	Project Name & No.: Keystone XL-10623-007-803A Milepost: 59.82			7		
QUALITATIVE AT	TRIBUTES					<u> </u>
Water Appearance (check all that apply)	Clear Slightly Turbid Cher: NO FLOW	Turbid  Very Turbid	Sheen on surface Greenish color	Floating alg Obvious su	gal mats  \ \ rface scum \ \	Water Color:
Stream Substrate %	Silts Concrete Other: 60 Expla	Cobbles 20 Muck in: CLAY	Bedrock Vegetation:	Sands	Gravel 20	
Aquatic Habitats (check all that apply)	Sand Bar ☐ Gravel Bar ☒ Mud Bar ☐ Undercut Banks ☒	Gravel Riffles  Deep Pools  Bank root systems Overhanging trees	In-strea s ☑ Fringin	am emergent plant am submerged pla g Wetlands:		
Aquatic Organisms Observed (check all that apply)	Waterfowl Snakes Invertebrates:	Fish (adult) ☐ Fish (juvenile) ☐	Turtles 🗍 Frogs 📋	Other:		
Riparian Zone	Circle vegetative la	getation zone from edg yers: trees ⊠ shru areas within riparian zoi			Γ): 50 n-buffered concentrated	d flows NO
Tributary is	⊠Natural	☐Artificial (Man-Made				
Channel Condition:	Channelization or Braiding	Unnatural straightenin	g Downcutting D	ikes/Berms 🔲	Excessive bank erosion	Other
Disturbances	Livestock access to Waste discharge pi	,	Manure Other:	in stream or on ba	nks 🛛	
Describe Habitat Char	actoristics Aquatic	& Tarrestrial Diversi	tv	Habitat	ID No :	
SILVER SAGEBRUS BURDOCK ARE SO ALKALAI MUD FLA	SH, ROSA SPP. ATTERED WITH	RIPARIAN ZONE STREAM CHANN	WITH LARGE PLA IEL. SNOW BERR	INS COTTON	WOOD, COCKLE	
Comments (e.g. pipeline	crossing angle, cor	struction constraints	s, erosion potential, ex	isting disturbanc	es, and meanders)	
STREAM QUALITY Hi	gh 🔲	Moderate	×	Low		

1601 Prospect Parkway Ft. Collins, CO 80525



### **Waterbody Data Form**

Feature ID: S23FA001
NORT FORK COAL BANK CREEK

✓ Centerline ☐ Re-Route ☐ Access Road ☐ Ancillary Facility ☐ Other	
Date:         Client/Project Name:           2008/10/06         KEYSTONE XL- 10623-007-803D	Milepost Enter/Exit: 276.06
Team: State/County: MT - FA	Quad Name: Snider Hill
Logbook No.: Logbook Page No.: Tract No.:  1 64 MLMTFA00930.0	Photo: S23FA001_N,S,W
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)	
300	A aol
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit ☑ Stream ☐ Ag. Ditch ☐ Oth	er
Fast   Moderate   Slow   Very Slow   None	
Tes VINO UNKNOWN	
Felential (Flows year found)	Constant
	only in response to rainfall)
OHWM Width (ft.): 7	
Sinuosity: Braided Meandering Straight N/A	
Stream Width (ft.): 7 Water Surface (At Crossing Location)	5
Stream Depth (ft.): □ 0	
OHWM Indicators:	
CLEAR NATURAL LINE ON BANK	
Bank Height (ft.):         Left:         0-2         ✓ 2-4         4-6         6-8         8+           (Looking Downstream)         Right:         0-2         ✓ 2-4         4-6         6-8         8+	
Bank Slope: Left: 4:1 3:1 2:1 1:1 Vertical	
(Looking Downstream) Right: ☐ 4:1 ☐ 3:1 ☐ 2:1 ☐ 1:1 ✓ Vertical	

# ENSR AECOM

ENSR 1601 Prospect Parkway Ft. Collins, CO 80525

### **Qualitative Attributes**

Water Appearance:			
☐ Clear	☐ Turbid	☐ Sheen on Surfac	☐ Floating Algalmats
☐ Slightly Turbid	Very Turbid	☐ Greenish Color	☐ Obvious Surface Scum
Water Color:			☐ Other:
Stream Substrate %:			
100% OTH	ER - CLAY		
Aquatic Habitats:			
☐ Sand Bar	☐ Gravel Riffle	☐ In-stream E	Emergent Plant % Cover: 0
☐ Gravel Bar	Deep Pools	☐ In-stream S	Submerged Plant % Cover: 0
☐ Mud Bar	☐ Bank Root Syster	ms 🔲 Fringing W	etlands Characteristics:
✓ Undercut Banks	Overhanging Tree	es/Shrubs	
Aquatic Organisms Ot	served:	· ·	
☐ Waterfowl	☐ Fish (Adult)	☐ Turtles	☑ Other: NONE
☐ Snakes	☐ Fish (Juvenile)	☐ Frogs	
☐ Invertebrate			
Riparian Zone:			
Width of Natural Ve	getation Zone from Ed	ge of Active Channel out	onto Flood Plain (ft): 8
Vegetative Layers:	☐ Herbs ☐ Shrubs	□ Trees	
☐ Significant Bare	Areas Within Riparian	Zone	Non-Buffered Concentrated Flows
Tributary Condition:	✓ Natural	Artificial (Man-Made)	Manipulated
Channel Condition:	✓ Channelization/Bra	niding	raightening
	☐ Dikes/Berms	☐ Excessive B	
Disturbances:	✓ Livestock Access t		inure In Stream or On Banks
	☐ Waste Discharge F	•	indicate of contraction
	Other:	ipes i resent	
	, Aquatic, and Terrestriai I	Diversity Description:	
Habitat ID Number:			
GRAZED			
Comments:			
Stream Quality:	High 🗌 Moderate 🕟	Low	



Feature ID: S31FA001

SODA CREEK

2008/11/03	Client/Project Name: Keystone XL-1062		Other  Milepost Enter/Exit: 272.12
Team: 31	State/County: MT - Fallon		Quad Name:
Logbook No.:	Logbook Page No.:	Tract No.:	MT, Scole School
	52	ML_MT_FA_850	Photo: S31FA001_E, S, W.jpg
Drawing (Please pro	ide orientation arrow, all feat	tures identified, location to centerline, etc.)	
	photo	CL NT	
Waterbody Type:	Lak ☐ Pond ☐ Bor	orrow Pi 📝 Stream 🖂 Ag. Ditch	
Stream Flow:	Fast Moderat		☐ Other
Subsurface Flow:		☐ Slow ☐ Very Slow 📝 None	9
low Type:	Perennial (Flows year		/
	Seasonal (Continuous		(Flows <3 month   ✓ None
Pirection of Flow:	N DNE DE		(Flows only in response to rainfall)
HWM Width (ft.): 2	)	SE S SW W	NW No Flow
Z		Pandorina D. C	
Inuosity:	- ING	eandering Straight	□ N/A
inuosity:		Water Surface /At Con-	41
Inuosity: tream Width (ft.): 3	0	Water Surface (At Crossing L	<b>Z</b>
Inuosity: tream Width (ft.): 3			<b>Z</b>
Inuosity:  tream Width (ft.): 3 tream Depth (ft.):  HWM Indicators:	0 □ 0  □ 1-3 <b>☑</b> 3-6	6 🗍 6-12 🗍 12-18 🗍 18-24 [	
Inuosity:  tream Width (ft.): 3  tream Depth (ft.):  HWM Indicators:  BRUPT PLANT C	0 □ 0 □ 1-3 <b>☑</b> 3-6 OMMUNITY CHANGE	6 🗌 6-12 🗌 12-18 🗌 18-24 🛭	
Inuosity:  tream Width (ft.): 3  tream Depth (ft.):  HWM Indicators:  BRUPT PLANT C	0 □ 0  □ 1-3 <b>☑</b> 3-6	6 🗌 6-12 🗌 12-18 🗌 18-24 🛭	
Inuosity:  tream Width (ft.): 3  tream Depth (ft.):  HWM Indicators:  BRUPT PLANT C  ENT, MATTED O	0 □ 0 □ 1-3 ☑ 3-6 OMMUNITY CHANGE R MISSING VEGETATIO	6 🗌 6-12 🗌 12-18 🗌 18-24 🛭	
Inuosity:  tream Width (ft.): 3  tream Depth (ft.):  HWM Indicators:  BRUPT PLANT C ENT, MATTED O COUR  OIL CHARACTER  ank Height (ft.):	0 ☐ 0 ☐ 1-3 ☑ 3-6 OMMUNITY CHANGE R MISSING VEGETATION CHANGES	6	
Inuosity:  tream Width (ft.): 3  tream Depth (ft.):  HWM Indicators:  BRUPT PLANT C ENT, MATTED O COUR  OIL CHARACTER	O	6	
Inuosity:  tream Width (ft.): 3  tream Depth (ft.):  HWM Indicators:  BRUPT PLANT C ENT, MATTED O COUR  OIL CHARACTER  ank Height (ft.):	0  O  O  O  O  O  O  O  O  O  O  O  O  O	6	24-36 ☐ 36-48 ☐ 48-60 ☐ 60+

ENSR 1601 Prospect Parkway Ft. Collins, CO 80525

Qualitative Attribut	38			
Water Appearance:		_		
☐ Clear	☐ Turbid	Sheen on Surfac	☐ Floating Algalmats	
Slightly Turbid	☐ Very Turbid	Greenish Color	Obvious Surface Scum	
Water Color:			Other:	
Stream Substrate %:				
30% VEGE	TATION			
40% SILTS	}			
30% OTHE	R - CLAY			
Aquatic Habitats:				
☐ Sand Bar	☐ Gravel Riffle	✓ In-stream !	Emergent Plant % Cover: 10	
☐ Gravel Bar	☐ Deep Pools	☐ In-stream S	Submerged Plant % Cover: 0	
✓ Mud Bar	☐ Bank Root Systems	Fringing W	etlands Characteristics:	
☐ Undercut Banks	☐ Overhanging Trees/S	Shrubs		
Aquatic Organisms Ob	served:			
☐ Waterfowl		☐ Turtles	☑ Other: NONE	İ
☐ Snakes	• •	Frogs		
☐ Invertebrate	, _	_		
Riparian Zone:				
1 -	getation Zone from Edge	of Active Channel out	onto Flood Plain (ft) 0	
			· · · · · · · · · · · · · · · · · · ·	
1	✓ Herbs ☐ Shrubs ☐		No. D. Marcel Commented Flores	
1 -	Areas Within Riparian Zor		Non-Buffered Concentrated Flows	
Tributary Condition:	✓ Natural  ☐ Art	ificial (Man-Made) 🛘	] Manipulated	
Channel Condition:		<del>-</del>	• •	
	☐ Dikes/Berms	Excessive B	ank Erosion   N/A	
Disturbances:	✓ Livestock Access to R	Ripanan Zone 🔲 Ma	anure In Stream or On Banks	
	☐ Waste Discharge Pipe			
	☐ Other:			
	, Aquatic, and Terrestrial Dive	ersity Description:		
Habitat ID Number			OOLAND ABUTTO OTDEAM	
CHANNEL DEGRE	DATION DUE TO LIVEST	OCK ACCESS. GRA	SSLAND ABUTTS STREAM.	
Comments:				
Stream Quality:	Hig	.ow		



Feature ID: S31MC001

CHEER CREEK

☐ Centerline ☑ F	Re-Route   Access F	Road ☐ Ancillary F	acility 🗌 Other	
Date: 2008/10/30	Client/Project Name: Keystone XL- 10623			Milepost Enter/Exit:
Team: 31	State/County: MT - McCone			Quad Name: MT, McRae Springs
2 37		Tract No.: ML_MT_MC_00115.	0	Photo: S31MC001_E, S, W.jpg
Drawing (Please provid	e orientation arrow, all featur	es identified, location to co	enterline, etc.)	
		PHOT S31MC0	O POINT	
Stream Flows		ow Pi 📝 Stream 🛭	☐ Ag. Ditch ☐ Othe	r
Subsurface Flow:	Fast Moderat	Slow	w 📝 None	
Flow Tymes		nown		
	Perennial (Flows year i Seasonal (Continuous f		Intermittent (Flows <	
				lly in response to rainfall)
OHWM Width (ft.): 2		SE S	SW W N	W No Flow
Sinuosity:	Braided  Mea	ındering   Straig	nht CALLA	
Stream Width (ft.): 10			ght	
Stroom Donah (6)	0 🗆 1-3 🗀 3-6			0
OHWM Indicators:			□ 18-24 □ 24-36	□ 36-48 □ 48-60 □ 60+
BENT, MATTED OR	MISSING VEGETATION	ON		
Bank Height (ft.): (Looking Downstream)	Left: □ 0-2 □ 2- Right: □ 0-2 □ 2-		<b>№</b> 8+	
Bank Slope: (Looking Downstream)	Left:         □ 4:1         □ 3:           Right:         □ 4:1         □ 3:		☐ Vertical	

#### **ENSR**

1601 Prospect Parkway Ft. Collins, CO 80525

# ENSR ALCOM

### **Qualitative Attributes**

Water Appearance:	
☐ Clear	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats
☐ Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum
Water Color:	☐ Other:
Stream Substrate %:	
60% SILTS	
30% VEGE	ETATION
10% GRAV	/EL
Aquatic Habitats:	
☐ Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover: 0
Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plant % Cover: 0
☐ Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:
☐ Undercut Banks	
Aquatic Organisms Ob	served:
□ Waterfowl	☐ Fish (Adult) ☐ Turtles ☑ Other: NONE
☐ Snakes	☐ Fish (Juvenile) ☐ Frogs
☐ Invertebrate	
Riparian Zone:	
•	getation Zone from Edge of Active Channel out onto Flood Plain (ft) 0
	☑ Herbs ☑ Shrubs ☐ Tree ☐ Multiple
_	Areas Within Riparian Zone
Tributary Condition:	✓ Natural ☐ Artificial (Man-Made) ☐ Manipulated
Channel Condition:	
	☐ Channelization/Braiding ☐ Unnatural Straightening ☑ Downcutting ☐ Dikes/Berms ☐ Excessive Bank Erosion ☐ N/A
Disturbances:	
Distarbances.	☐ Livestock Access to Riparian Zone ✓ Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
Habitat Characteristics	s, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number	
	SION DUE TO LIVESTOCK ACCESS. GRASSLAND ABUTTS CHANNEL. CHANNEL LOCATED
HIGH IN WATERS	HED
Comments:	
Stream Quality:	Hig ☐ Moderate ☑ Low
	J. 1.3 E



Feature ID: S31MC002 WEST FORK LOST CREEK

Date: 2008/10/30	Client/Project Name:  Keystone XL-10623-007-803D	Milepost Enter/Exit: 0.458 - 0.46
Team: 31	State/County: MT - McCone	Quad Name: MT, Bobcat Creek
Logbook No.: 2	Logbook Page No.: Tract No.: 40 ML_MT_MC_00040.0	Photo: S31MC002_E, S, SW.jpg
Drawing (Please p	rovide orientation arrow, all features identified, location to centerline, etc.)	
	631MC002	
Vaterbody Type:	☐ Lak ☐ Pond ☐ Borrow Pi ☑ Stream ☐ Ag. Ditch	☐ Other
Vaterbody Type: tream Flow: ubsurface Flow:	☐ Fast ☐ Moderat ☐ Slow ☐ Very Slow ☑ None	_ Other
tream Flow:	Fast	
tream Flow: ubsurface Flow: low Type:	Fast	(Flows <3 month  None
tream Flow: ubsurface Flow: low Type:	Fast Moderat Slow Very Slow None  Yes No Unknown  Perennial (Flows year round) Intermittent ( Seasonal (Continuous flow ≥ 3 months) Ephemeral (I  N NF F F SF S	(Flows <3 month  ☑ None Flows only in response to rainfall)
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.):	Fast Moderat Slow Very Slow None  Yes No Unknown  Perennial (Flows year round) Intermittent ( Seasonal (Continuous flow ≥ 3 months) Ephemeral (I  N NF F F SF S	(Flows <3 month  None
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.): inuosity:	Fast	(Flows <3 month   ☑ None Flows only in response to rainfall) ☐ NW ☐ No Flow
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.): inuosity:	Fast	(Flows <3 month   ✓ None Flows only in response to rainfall)  ☐ NW ☐ No Flow  ☐ N/A
tream Flow: ubsurface Flow: low Type: frection of Flow: HWM Width (ft.): inuosity: fream Width (ft.): fream Depth (ft.):	Fast	(Flows <3 month  Flows only in response to rainfall)  NW □ No Flow  N/A  Pocation) 0
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.): nuosity: ream Width (ft.): ream Depth (ft.):	Fast	(Flows <3 month  Flows only in response to rainfall)  NW No Flow  N/A  Pocation) 0
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.): inuosity: ream Width (ft.): ream Depth (ft.): HWM Indicators: ENT, MATTED	Fast	(Flows <3 month  Flows only in response to rainfall)  NW □ No Flow  N/A  Pocation) 0
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.): inuosity: cream Width (ft.): ream Depth (ft.): HWM Indicators: ENT, MATTED BRUPT PLANT	Fast	(Flows <3 month  Flows only in response to rainfall)  NW □ No Flow  N/A  Pocation) 0
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.): inuosity: ream Width (ft.): ream Depth (ft.): HWM Indicators: ENT, MATTED BRUPT PLANT	Fast	(Flows <3 month  Flows only in response to rainfall)  NW □ No Flow  N/A  Pocation) 0
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.): inuosity: ream Width (ft.): HWM Indicators: ENT, MATTED BRUPT PLANT ink Height (ft.): boking Downstream	Fast	(Flows <3 month  Flows only in response to rainfall)  NW □ No Flow  N/A  Pocation) 0
tream Flow: ubsurface Flow: low Type: lrection of Flow: HWM Width (ft.): inuosity: ream Width (ft.): ream Depth (ft.): HWM Indicators: ENT, MATTED BRUPT PLANT	Fast	(Flows <3 month  Flows only in response to rainfall)  NW No Flow  N/A  Pocation)  24-36 □ 36-48 □ 48-60 □ 60+

#### **ENSR**

1601 Prospect Parkway Ft. Collins, CO 80525



<b>Qualitative Attribut</b>	es		
Water Appearance:			
☐ Clear	☐ Turbid	Sheen on Surfac	☐ Floating Algalmats
Slightly Turbid	☐ Very Turbid		☐ Obvious Surface Scum
Water Color:			☐ Other:
Stream Substrate %:			
70% SILTS	6		
20% VEGE	ETATION		
10% GRA\	/EL		
Aquatic Habitats:	A CONTRACTOR OF THE CONTRACTOR		
☐ Sand Bar	☐ Gravel Riffle	✓ In-stream	Emergent Plant % Cover: 5
☐ Gravel Bar	□ Deep Pools	☐ In-stream	Submerged Plant % Cover: 0
☐ Mud Bar	☐ Bank Root Syste	ms 🔲 Fringing W	etlands Characteristics:
✓ Undercut Banks	Overhanging Tre	es/Shrubs	
Aquatic Organisms Ob			
☐ Waterfowl	☐ Fish (Adult)	☐ Turtles	☐ Other:
✓ Snakes	☐ Fish (Juvenile)	☐ Frogs	
☐ Invertebrate			
Riparian Zone:	getation Zone from Ed	lge of Active Channel out	onto Flood Plain (ft) 10
	_		Torrito Flood Flair (It) To
Vegetative Layers:	✓ Herbs ✓ Shrubs		
	Areas Within Riparian	Zone	Non-Buffered Concentrated Flows
Tributary Condition:	✓ Natural	Artificial (Man-Made)	] Manipulated
Channel Condition:	☐ Channelization/Bra	aiding 🔲 Unnatural S	traightening   Downcutting
	☐ Dikes/Berms	☐ Excessive B	ank Erosion □ N/A
Disturbances:	☐ Livestock Access	to Riparian Zone   ☑ M	anure In Stream or On Banks
	☐ Waste Discharge		
	☐ Other:	i ipos i rosoni	
	s, Aquatic, and Terrestrial	Diversity Description:	
Habitat ID Number			
			POOLS WITHIN CHANNEL FROM LIVESTOCK.
channel has dam a	nd pond down stream.		
	- transminary		
Comments:			
Stream Quality:	Hig Ta Modoroto 1	7104	
	Hig  Moderate [	LOW	
			Y



Feature ID: S31MC003

LOST CREEK

Date:	Re-Route Access Road Ancillary Facility	☐ Other
2008/11/01	Client/Project Name: Keystone XL-10623-007-803D	Milepost Enter/Exit:
Team:	State/County:	96.65
31	MT - McCone	Quad Name: MT, McRae Springs
	ogbook Page No.: Tract No.:	
	45 ML_MT_MC_00080.0	Photo: S31MC003_N, S, W
Drawing (Please provi	ide orientation arrow, all features identified, location to centerline, e	etc.)
	CLNT	
	S31MC003	
	photo point	
Vaterbody Type:		
1 1	Lake Pond Borrow Pit Stream Ac Die	ch O/I
	Lake ☐ Pond ☐ Borrow Pit ☑ Stream ☐ Ag. Dit	
tream Flow:	Fast ☐ Moderate ☐ Slow ☐ Very Slow ☑ N	
tream Flow:	Fast Moderate Slow Very Slow No Unknown	one
tream Flow:  ubsurface Flow:  ow Type:	Fast Moderate Slow Very Slow No Yes No Unknown Perennial (Flows year round)	ent (Flows <3 month   ✓ None
tream Flow:  ubsurface Flow:  ow Type:  rection of Flow:	Fast	ent (Flows <3 month  Flows only in response to rainfall)
tream Flow: ubsurface Flow: ow Type: prection of Flow:	Fast	ent (Flows <3 month   ✓ None
tream Flow:  ubsurface Flow:  ow Type:  rection of Flow:  HWM Width (ft.): 15	Fast	ent (Flows <3 month  ral (Flows only in response to rainfall)  W NO NO Flow
tream Flow:  ubsurface Flow:  low Type:  rection of Flow:  HWM Width (ft.): 15	Fast	ent (Flows <3 month  ral (Flows only in response to rainfall)  W NW No Flow  N/A
tream Flow:  ubsurface Flow:  low Type:  lrection of Flow:  HWM Width (ft.): 15  nuosity:  ream Width (ft.): 20	Fast	ent (Flows <3 month  P None ral (Flows only in response to rainfall) W NW No Flow  N/A  Ng Location) 0
tream Flow:  ubsurface Flow:  low Type:  lrection of Flow:  HWM Width (ft.): 15  nuosity:  ream Width (ft.): 20  ream Depth (ft.):	Fast	ent (Flows <3 month  Flows only in response to rainfall)  W NW No Flow  N/A  Ng Location)  O
tream Flow:  ubsurface Flow:  low Type:  lrection of Flow:  HWM Width (ft.): 15  nuosity:  ream Width (ft.): 20  ream Depth (ft.):	Fast	ent (Flows <3 month  P None ral (Flows only in response to rainfall) W NW No Flow  N/A  Ng Location) 0
itream Flow:  iubsurface Flow:  ilow Type:  irection of Flow:  HWM Width (ft.): 15  inuosity:  iream Width (ft.): 20  iream Depth (ft.):  HWM Indicators:  BRUPT PLANT Co	Fast	ent (Flows <3 month  P None ral (Flows only in response to rainfall) W NW No Flow  N/A  Ng Location) 0
irection of Flow:  HWM Width (ft.):  Iream Depth (ft.):  HWM Indicators:  BRUPT PLANT Co	Fast	ent (Flows <3 month  P None ral (Flows only in response to rainfall) W NW No Flow  N/A  Ng Location) 0
Stream Flow:  Subsurface Flow:  Slow Type:  Sirection of Flow:  SHWM Width (ft.): 15  Sinuosity:  Stream Width (ft.): 20  Stream Depth (ft.):  HWM Indicators:	Fast	ent (Flows <3 month  P None ral (Flows only in response to rainfall) W NW No Flow  N/A  Ng Location) 0

ENSR AECOM

# ENSR

1601 Prospect Parkway Ft. Collins, CO 80525

i. Comns, CO 60323			
<b>Qualitative Attribut</b>	es		
Water Appearance:			
☐ Clear	☐ Turbid	Sheen on Surfac	☐ Floating Algalmats
Slightly Turbid	☐ Very Turbid	☐ Greenish Color	Obvious Surface Scum
Water Color:			☐ Other:
Stream Substrate %:			
80% VEGE	TATION		
20% SILTS	3		
Aquatic Habitats:			
☐ Sand Bar	☐ Gravel Riffle	☐ In-stream	Emergent Plant % Cover: 0
☐ Gravel Bar	□ Deep Pools	☐ In-stream	Submerged Plant % Cover: 0
☐ Mud Bar	☐ Bank Root Syster	ns 🗍 Fringing W	etlands Characteristics:
☐ Undercut Banks			
Arrament			
Aquatic Organisms Ob		Turtles	✓ Other: NONE
☐ Waterfowl	☐ Fish (Adult)	☐ Turtles	Utiler. NOINE
☐ Snakes	☐ Fish (Juvenile)	☐ Frogs	
☐ Invertebrate			
Riparian Zone:	***************************************		
Width of Natural Ve	getation Zone from Ed	ge of Active Channel out	onto Flood Plain (ft): 0
Vegetative Layers:	✓ Herbs ✓ Shrubs		
☐ Significant Bare	Areas Within Riparian	Zone   Evidence Of	Non-Buffered Concentrated Flows
Tributary Condition:	✓ Natural	Artificial (Man-Made)	] Manipulated
Channel Condition:	Channelization/Bra	iding	traightening   Downcutting
	☐ Dikes/Berms		Bank Erosion □ N/A
Disturbances:	☐ Livestock Access t	o Riparian Zone 🖾 M	anure In Stream or On Banks
	☐ Waste Discharge F	•	
	_	ipes riesein	
	Other:		
Habitat Characteristics	s, Aquatic, and Terrestrial	Diversity Description:	
Habitat ID Number:			
GRASSLAND ABU	TTS CHANNEL. LIVES	STOCK ACCESS HAS A	LTERED CHANNEL BED.
Comments:			
Stream Quality:	] High <b>☑</b> Moderate [	Low	



Feature ID: S31VA002

Date: 2008/11/14	Client/Project Name: Keystone XL 106	523-007-803D	Other  Milepost Enter/Exit: 49.72
Team: 31	State/County: MT - Valley		Quad Name: MT, Tampico NE
2	Logbook Page No.: 96	Tract No.: ML-MT-VA-00305.000	Photo: S31VA002 N, NW, SE, JPG
Drawing (Please prov	ride orientation arrow, all fe	atures identified, location to centerline, etc.	)
	531	7003	
		A /	
Vaterbody Type:	] Lake 📋 Pond 🔲 B	orrow Pit ☑ Stream ☐ Aq. Ditch	☐ Other
tream Flow:	] Lake □ Pond □ B ] Fast □ Moderate	orrow Pit ☑ Stream ☐ Ag. Ditch ☐ Slow ☐ Very Slow ☑ Non	
tream Flow:	Fast Moderate Yes No U	☐ Slow ☐ Very Slow ☑ Non	
tream Flow:	Fast Moderate Yes Mo U Perennial (Flows yea	☐ Slow ☐ Very Slow ☑ Non Inknown ar round) ☐ Intermitten	e
rection of Flow:	Fast Moderate Yes No U Perennial (Flows yea Seasonal (Continuou	☐ Slow ☐ Very Slow ☑ Non Inknown ar round) ☐ Intermitten us flow ≥ 3 months) ☑ Ephemeral	e t (Flows <3 month  None
tream Flow: ubsurface Flow: ow Type: rection of Flow:	Fast Moderate Yes No U Perennial (Flows yea Seasonal (Continuou	☐ Slow ☐ Very Slow ☑ Non Inknown ar round) ☐ Intermitten	t (Flows <3 month   ✓ None (Flows only in response to rainfall)
tream Flow: ubsurface Flow: ow Type: rection of Flow:	Fast Moderate Yes No U Perennial (Flows yea Seasonal (Continuou N NE E	Slow	e  t (Flows <3 month  ✓ None  (Flows only in response to rainfall)
tream Flow:  ubsurface Flow:  low Type:  lrection of Flow:  HWM Width (ft.): 6  nuosity:	Fast Moderate Yes No U Perennial (Flows yea Seasonal (Continuou N NE E  Braided M	Slow Very Slow № Non Inknown  ar round) Intermitten  is flow ≥ 3 months) № Ephemeral  Ø SE S SW V  Ieandering Straight	t (Flows <3 month
tream Flow:  ubsurface Flow:  ow Type:  rection of Flow:  HWM Width (ft.):  nuosity:  ream Width (ft.):  10	Fast Moderate Yes No U Perennial (Flows yea Seasonal (Continuou N NE E  Braided MM	Slow Very Slow Non Non Inknown  ar round) Intermitten  Is flow ≥ 3 months) Fephemeral  SE S SW V  Ieandering Straight  Water Surface (At Crossing	e  t (Flows <3 month  None (Flows only in response to rainfall)  N No Flow  N/A  Location) 0
ream Flow:  ubsurface Flow:  ow Type:  rection of Flow:  dWM Width (ft.):  nuosity:  ream Width (ft.):  ream Depth (ft.):	Fast Moderate Yes No U Perennial (Flows yea Seasonal (Continuou N NE E  Braided MM	Slow Very Slow № Non Inknown  ar round) Intermitten  is flow ≥ 3 months) № Ephemeral  Ø SE S SW V  Ieandering Straight	e  t (Flows <3 month  None (Flows only in response to rainfall)  N No Flow  N/A  Location) 0
tream Flow:  ubsurface Flow:  ow Type:  rection of Flow:  HWM Width (ft.): 6  nuosity:  ream Width (ft.): 10  ream Depth (ft.):	Fast Moderate Yes No U Perennial (Flows yea Seasonal (Continuou N NE E  Braided MM	Slow Very Slow Non Non Inknown  ar round) Intermitten  Is flow ≥ 3 months) Fephemeral  SE S SW V  Ieandering Straight  Water Surface (At Crossing	t (Flows <3 month  (Flows only in response to rainfall)  NO NO Flow  N/A  Location)  0
tream Flow:  ubsurface Flow:  ow Type:  rection of Flow:  HWM Width (ft.):  nuosity:  ream Width (ft.):  10	Fast Moderate Yes No U Perennial (Flows yea Seasonal (Continuou N NE E  Braided M M 0 1-3 3 Left: 0-2	Slow Very Slow Non Non Inknown  ar round) Intermitten  Is flow ≥ 3 months) Fephemeral  SE S SW V  Ieandering Straight  Water Surface (At Crossing	t (Flows <3 month  (Flows only in response to rainfall)  NO NO Flow  N/A  Location)  0

**ENSR** 

1601 Prospect Parkway Ft. Collins, CO 80525



#### **Qualitative Attributes**

Water Appearance:			
Clear	☐ Turbid	☐ Sheen on Surfac	☐ Floating Algalmats
Slightly Turbid	☐ Very Turbid	Greenish Color	Obvious Surface Scum
ongritty relicie	_ vory rundia		Other:
Stream Substrate %:			_ Guioi.
50% SILTS			
50% VEGE	TATION		
Aquatic Habitats:		(	Turning the Direct of Course O
☐ Sand Bar	☐ Gravel Riffle		Emergent Plant % Cover: 0
☐ Gravel Bar	□ Deep Pools		Submerged Plant % Cover: 0
☐ Mud Bar	☐ Bank Root Syster	ns 🗌 Fringing W	etlands Characteristics:
☐ Undercut Banks	Overhanging Tree	es/Shrubs	
Aquatic Organisms Ob	served:		
☐ Waterfowl	☐ Fish (Adult)	☐ Turtles	☐ Other:
Snakes	☐ Fish (Juvenile)	☐ Frogs	
☐ Invertebrate	(22.00.00)		
Riparlan Zone:			
1 -	actation Zone from Ed	ge of Active Channel out	onto Flood Plain (ff): 0
1	•	-	onto i loca i lain (it). o
	✓ Herbs ☐ Shrubs		
	Areas Within Riparian	Zone	Non-Buffered Concentrated Flows
Tributary Condition:	✓ Natural	Artificial (Man-Made)	] Manipulated
Channel Condition:	✓ Channelization/Bra	niding 🔲 Unnatural S	traightening    Downcutting
	☐ Dikes/Berms	☐ Excessive B	ank Erosion
Disturbances:	✓ Livestock Access t	o Riparian Zone ☐ Ma	anure In Stream or On Banks
	☐ Waste Discharge F	•	
	Other:	ipos i resent	
	U Other.		
Habitat Characteristics	, Aquatic, and Terrestrial	Diversity Description:	
Habitat ID Number:			
RANGELAND ABU	TTS STREAM		
And the second s			
Comments:			
Stroom Quality			
Stream Quality:	High 📝 Moderate 🛭	] Low	

1601 Prospect Parkway Ft. Collins, CO 80525

# ENSR AECOM

# **Waterbody Data Form**

Feature ID: S32MC001

NA

☐ Centerline ☐ Re-Route ☑ Access Road ☐ Ancillary Facility ☐ Other	
Date:         Client/Project Name:           2008/11/10         Keystone XL-10623-007-803D	Milepost Enter/Exit: 0.599 - 0.613
Team: State/County: 32 MT - McCone	Quad Name: North Fork Horse Creek
Logbook No.: Logbook Page No.: Tract No.:  2 82 MC426	Photo: S32MC001_E.JPG
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)	
532mc00) (AR0025	
Waterbody Type: ☐ Lak ☐ Pond ☐ Borrow Pi ☑ Stream ☐ Ag. Ditch ☐ Oth	ner
Fast   Moderat   Slow   Very Slow   None	
Yes V NO UNKNOWN	2 month
Tables of Tables	<3 month
Direction of Fiow: N NE E SE S SW W	NW No Flow
OHWM Width (ft.): 25	
Sinuosity: ☐ Braided ☑ Meandering ☐ Straight ☐ N/A	
Stream Width (ft.): 40 Water Surface (At Crossing Location	15
Stream Depth (ft.): □ 0 □ 1-3 ☑ 3-6 □ 6-12 □ 12-18 □ 18-24 □ 24-36	6 🗌 36-48 🗌 48-60 🗌 60+
OHWM Indicators:  ABRUPT PLANT COMMUNITY CHANGE  CLEAR NATURAL LINE ON BANK	
Bank Height (ft.):         (Looking Downstream)         Left:         □ 0-2         ☑ 2-4         □ 4-6         □ 6-8         □ 8+           Right:         □ 0-2         ☑ 2-4         □ 4-6         □ 6-8         □ 8+	
Bank Slope: Left: 4:1 3:1 2:1 1:1 Vertical  (Looking Downstream) Right: 4:1 3:1 2:1 1:1 Vertical	

#### **ENSR**

1601 Prospect Parkway Ft. Collins, CO 80525



<b>Qualitative Attribut</b>	es			
Water Appearance:				
☐ Clear	☐ Turbid	Sheen on Surfac	☐ Floating Algalmats	
☐ Slightly Turbid	☐ Very Turbid	Greenish Color	Obvious Surface Scum	
Water Color:			Other:	
Stream Substrate %:				
30% SILTS	3			
20% VEGE				
50% OTHE	R - CLAY			
Aquatic Habitats:				
☐ Sand Bar	☐ Gravel Riffle	✓ In-stream	Emergent Plant % Cover: 15	
☐ Gravel Bar	Deep Pools	☐ In-stream	Submerged Plant % Cover: 0	
☐ Mud Bar	☐ Bank Root Syste	ems 🗌 Fringing W	etlands Characteristics:	
☐ Undercut Banks	Overhanging Tre	ees/Shrubs		
Aquatic Organisms Ob	served:		P-14-W-14-W-14-W-14-W-14-W-14-W-14-W-14-	
✓ Waterfowl	Fish (Adult)	☐ Turtles	☐ Other:	
Snakes	☐ Fish (Juvenile)	☐ Frogs	_ onto.	
☐ Invertebrate				
Riparian Zone:	antation Zone from C	dan of Antivo Channel and	anta Flood Diain (ff) 20	
		dge of Active Channel out	onto Flood Plain (It) 20	
Vegetative Layers:	✓ Herbs ☐ Shrubs	☐ Tree ☐ Multiple		
Significant Bare A	Areas Within Riparian	Zone	Non-Buffered Concentrated Flows	
Tributary Condition:	✓ Natural	Artificial (Man-Made)	] Manipulated	
Channel Condition:	Channelization/Br	aiding	traightening Downcutting	
	☐ Dikes/Berms	<del>-</del> -	ank Erosion	
Disturbances:	☐ Livestock Access		anure In Stream or On Banks	
			allule III Stream of On Banks	
	☐ Waste Discharge	Pipes Present OSSING & NO CULVERT		
	Uner: ROAD CR	USSING & NO CULVERT		
Habitat Characteristics	, Aquatic, and Terrestrial	Diversity Description:		
Habitat ID Number				
RANGELAND ABUT	TTS CHANNEL			
Comments:				
ROAD CROSSING	IS PERPENDICULA	R		
				-
Stroom Oveller				
Stream Quality:	Hig  Moderate	☐ Low		

1601 Prospect Parkway Ft. Collins, CO 80525



# **Waterbody Data Form**

Feature ID: S32MC002
E. FORK PRARIRIE ELK CREEK

☐ Centerline ☐ Re	e-Route ☑ Access Road ☐ Ancillary Facility ☐ Other	
Date: 2008/11/10	Client/Project Name: Keystone XL-10623-007-803D	Milepost Enter/Exit: 0.873 - 0.879
Team: 32	State/County: MT - McCone	Quad Name: North Fork Horse Creek
Logbook No.: Log 2 84	book Page No.: Tract No.:	Photo: S32MC002_S, N, NW.JPG
Drawing (Please provide	orientation arrow, all features identified, location to centerline, etc.)	
	AROO25 NW S32mcoo2	
Stroom Flour		her
Subcurface Flour	Fast ☐ Moderat ☐ Slow ☐ Very Slow ☑ None  Yes ☑ No ☐ Unknown	
Flow Type:	Perennial (Flows year round) ✓ Intermittent (Flows	s <3 month
Direction of Flow:		NW No Flow
OHWM Width (ft.): 20		
	Braided ☑ Meandering ☐ Straight ☐ N/A	
Stream Width (ft.): 30 Stream Depth (ft.):	Water Surface (At Crossing Location	0
OHWM Indicators:	0	6 🗌 36-48 🗌 48-60 🗌 60+
	MMUNITY CHANGE INE ON BANK	
Bank Height (ft.): (Looking Downstream)	Left:       □ 0-2       □ 2-4       □ 4-6       ✔ 6-8       □ 8+         Right:       □ 0-2       □ 2-4       □ 4-6       ✔ 6-8       □ 8+	
Bank Slope: /Looking Downstream)	Left:       □ 4:1       □ 3:1       ✓ 2:1       □ 1:1       □ Vertical         Right:       □ 4:1       □ 3:1       ✓ 2:1       □ 1:1       □ Vertical	

**ENSR** 1601 Prospect Parkway

Ft. Collins, CO 80525 **Qualitative Attributes** Water Appearance: ☐ Clear ☐ Turbid  $\hfill\square$  Floating Algalmats ☐ Sheen on Surfac ☐ Obvious Surface Scum ☐ Slightly Turbid ☐ Very Turbid ☐ Greenish Color

Water Color:	Other:
Stream Substrate %:	
20% VEGE	ETATION
40% SILTS	3
40% OTHE	ER - CLAY
Aquatic Habitats:	
☐ Sand Bar	☐ Gravel Riffle
☐ Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plant % Cover: 0
☐ Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:
☐ Undercut Banks	☐ Overhanging Trees/Shrubs
Aquatic Organisms Ob	served:
✓ Waterfowl	☐ Fish (Adult) ☐ Turtles ☐ Other:
☐ Snakes	☐ Fish (Juvenile) ☐ Frogs
☐ Invertebrate	
Riparian Zone:	
Width of Natural Ve	getation Zone from Edge of Active Channel out onto Flood Plain (ft) 20
Vegetative Layers:	✓ Herbs ☐ Shrubs ☐ Tree ☐ Multiple
✓ Significant Bare A	Areas Within Riparian Zone
Tributary Condition:	✓ Natural ☐ Artificial (Man-Made) ☐ Manipulated
Channel Condition:	☐ Channelization/Braiding ☐ Unnatural Straightening ☐ Downcutting
	☐ Dikes/Berms ☐ Excessive Bank Erosion ☑ N/A
Disturbances:	✓ Livestock Access to Riparian Zone ☐ Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
	, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number	TTO OTDEAN
RANGELAND ABU	ITS STREAM
Comments:	& NO EXISTING CULVERT 8' PIPE PRESENT
NOAD ONCOUNT	A NO EXIOTINO GOLVENT OTTI ET NEGENT
Stroom Ougliby	
Stream Quality:	Hig   ✓ Moderate   Low

Cracker Box Crock\_ S105DA 002 duterithent

Date: 5/29   10   Client/Project Name:	Centerline Re-Route Access Road Ancillary Fa	acility Transmission Line MOther MT1/9
Date: 5/29   10   Client/Project Name:   State/County:   State/County:   State/County:   Dates on Co	Centerline ID:	
Team:    Site   0.5		KXC Phuse IV
Team:   Site   0 S	Client/Project Name:	Milepost Enter/Exit:
Logbook Page No.: 4 Tract No.: MTVB-MT-PA-0250.000  Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)  Waterbody Type: □ Lake □ Pond □ Borrow Pit □ Stream □ Ag. Ditch □ Other  Stream Flow: □ Fast □ Moderate □ Slow □ Very Slow ▼None - druy  Flow Type: □ Perennial (Flows year round) □ Hintermittent (Flows <3 month) □ None □ Seasonal (Continuous flow ≥ 3 months) □ Ephemeral (Flows only in response to rainfall)  Direction of Flow: □ N □ NE □ E □ SE □ S □ SW □ W □ NW □ No Flow  OHWM Width (ft.): Arcd to distinguish □ Meandering □ Straight □ N/A  Stream Width (ft.): □ Braided □ Meandering □ Straight □ N/A  Stream Beith (ft.): □ 0 ■ 1-3 □ 3-6 □ 6-12 □ 12-18 □ 18-24 □ 24-36 □ 36-48 □ 48-60 □ 60+	Team: State/County	muda MTV9.23.55
Logbook Page No.: 4 Tract No.: AUT VB - MT - DA - 00250.000  Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)  Waterbody Type: □ Lake □ Pond □ Borrow Pit □ Stream □ Ag. Ditch □ Other  Stream Flow: □ Fast □ Moderate □ Slow □ Very Slow ☑ None - drug  Flow Type: □ Perennial (Flows year round) □ Seasonal (Continuous flow ≥ 3 months) □ Ephemeral (Flows only in response to rainfall)  Direction of Flow: □ N □ NE □ E □ SE □ S □ SW □ W □ NW □ No Flow  OHYM Width (ft.): Aard to distinguish: □ Near Near Near Near Near Near Near Near	Bio 1050 Dauson Co	Quad Name:
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)    Value	Logbook No.: Logbook Page No.: Tract No.:	
Waterbody Type:LakePondBorrow PitKStreamAg. DitchOther  Stream Flow:FastModerateSlowVery SlowAnonedray  Flow Type:Perennial (Flows year round)Hntermittent (Flows <3 monthNoneSeasonal (Continuous flow ≥ 3 months)Ephemeral (Flows only in response to rainfall)  Direction of Flow:NNEKESESSSWNWNNWNO Flow  OHWM Width (ft.):Ard ho _\dishinguish;& Nine& isScov ~_LackdVeryLackdVer	10300 MI-D	A-00250.000
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit ☐ Stream ☐ Ag. Ditch ☐ Other  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very Slow ☐ None — Juny  Flow Type: ☐ Perennial (Flows year round) ☐ Hintermittent (Flows <3 month ☐ None ☐ Seasonal (Continuous flow ≥ 3 months) ☐ Ephemeral (Flows only in response to rainfall)  Direction of Flow: ☐ N ☐ NE ☐ E ☐ SE ☐ S ☐ SW ☐ W ☐ NW ☐ No Flow  OHWM Width (ft.): hard to distinguish: ☐ Tune ☐ is Scour ☐ Lack of Veg in cor fain place.  Sinuosity: ☐ Braided ☐ Meandering ☐ Straight ☐ N/A  Stream Width (ft.): 12 ☐ 3 ☐ 6 6-12 ☐ 12-18 ☐ 18-24 ☐ 24-36 ☐ 36-48 ☐ 48-60 ☐ 60+	Drawing (Please provide orientation arrow, all features identified, location to	centerline, etc.)
Waterbody Type:   Lake   Pond   Borrow Pit   Stream   Ag. Ditch   Other		ST Nowwer W
Flow Type: Perennial (Flows year round) Plintermittent (Flows <3 month None Seasonal (Continuous flow ≥ 3 months) Ephemeral (Flows only in response to rainfall)  Direction of Flow: N NE FE SE S SW W NW NO Flow  OHWM Width (ft.): hard to dishinguish: Thure as is Scour - Lack of Veg is corfain place.  Sinuosity: Braided Meandering Straight N/A  Stream Width (ft.): 2' → 5' Water Surface (At Crossing Location)  Stream Depth (ft.): 20	Lake Pond Borrow Pit Stream	
Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)	Blow   Very	Slow None - dry
Seasonal (Continuous flow ≥ 3 months) ☐ Ephemeral (Flows only in response to rainfall)  Direction of Flow: ☐ N ☐ NE ☐ E ☐ SE ☐ S ☐ SW ☐ W ☐ NW ☐ No Flow  OHWM Width (ft.): hard to dishinguish; ☐ Ture æis scour ~ Lack of Veg in cortain place.  Sinuosity: ☐ Braided ☐ Meandering ☐ Straight ☐ N/A  Stream Width (ft.): ~2' ~5' Water Surface (At Crossing Location)  Stream Depth (ft.): ☐ 0 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 12-18 ☐ 18-24 ☐ 24-36 ☐ 36-48 ☐ 48-60 ☐ 60+		
Direction of Flow: N NE RE SE S SW W NW No Flow  OHWM Width (ft.): hard to dishinguish: There as is scow a lack of very in contain place.  Sinusity: Braided Meandering Straight N/A  Stream Width (ft.): 2' > 5' Water Surface (At Crossing Location)  Stream Depth (ft.): 0 1-3 3-6 6-12 12-18 18-24 24-36 36-48 48-60 60+	Seasonal (Continuous flow ≥ 3 months)	Ephemeral (Flows only in response to rainfall)
OHWM Width (ft.): hard to dishinguish: There as is scown a Lack of Veg in contain places.  Sinusity: Braided Meandering Straight N/A  Stream Width (ft.): 21 -5' Water Surface (At Crossing Location)  Stream Depth (ft.): 0 1-3 3-6 6-12 12-18 18-24 24-36 36-48 48-60 60+	Direction of Flow: N NE ME SE SE	
Stream Width (ft.): Water Surface (At Crossing Location)  Stream Depth (ft.): 0 1-3 3-6 6-12 12-18 18-24 24-36 36-48 48-60 60+	OUDSIDE DECLARACIONAL	EIS SCOUN & Lack of Nee in contain almost
Stream Width (ft.): 2 つら Water Surface (At Crossing Location) いいじ ー dug  Stream Depth (ft.): ② 0 関 1-3 ② 3-6 ② 6-12 ② 12-18 ② 18-24 ② 24-36 ② 36-48 ② 48-60 ② 60+	Sindostry:     Braided DX Meandering   S	traight N/A
Stream Depth (ft.): 0		Face (At Crossing Location)
OUWM Indicators		Dong - any
120126	OHWM Indicators:	- 10 E 10-27 E 24-00 E 30-40 E 40-00 E 001
Bank Height (ft.): Left: ▼ 0-2 □ 2-4 □ 4-6 □ 6-8 □ 8+	Bank Height (ft.): Left: \$\overline{Y}\$10-2 \$\overline{\tau}\$2-4 \$\overline{\tau}\$4-6 \$\overline{\tau}\$	6-8
(Looking Downstream) Right: 0-2 X 2-4 0 4-6 0 6-8 0 8+	(Looking Downstream)	
Bank Slope: Left:		
(Looking Downstream)  Right: 4:1 3:1 2:1 Vertical	(Looking Downstream)	
Tagin. E. T. 1 (23.5.1 E. 2.1 E. 1.1 E. Vertical	149n. F 4.1 M J.1 Z.1 E	1.1 E VEHICAL

photos: 5105DA002\_5(acruss)
-W(upgrad)
-E(downgrad)

*					
			•		
Qualitative Attribu	tes			5105DA00	2/cont)
Water Ap pearance:				510201100	2 (CO10.1)
Clear	Turbid	[] Chara			_
Sligh tly Turbid	Very Turbid	<ul><li>Sheen on Surfac</li><li>Greenish Color</li></ul>	Floating Algalmats	•	
☐ No Flow	Other:	Greenish Color	Obvious Surface Scum		
Stream Substrate %:	Celobles, Sand	110-	HA DRY		
Aquatic Habitats:	sand	1 Veg			-
Sand Bar	Gravel Riffle	□ ln stroom			-
🖺 Gravel Bar	Deep Pools	In street	Emergent Plant % Cover:		
	Bank Root Syster	ms Eringing M	Submerged Plant % Cover:		
Undercut Banks	Overhanging Tree		/etlands Characteristics:		
Aquatic Organisms Ob		ZI None			
	oserved: NOVE				-
Riparian Zone:					7
Width of Natural Ve	egetation Zone from Ed	ge of Active Channel out	t to Flood Plain (ft): Left - 10	Right - 10'	
Vegetative Layers:	Herbs Shrubs	☐ Trees ☐ Multiple		· .	}
Significant Bare Are	eas Within Riparian Zoi	ne ⊓Yes Nor □	Unknown		
Evidence Of Non-B	Buffered Concentrated F	Flows: Yes X No	T Unknown		
Tributary Condition:		Artificial (Man-Made)	<del></del>	200 1-1	
Channel Condition:	Channelization/Bra		——————————————————————————————————————	over trib. y	No com
	Dikes/Berms ~ R	. •		J	
Disturbances:	<del></del>				
	Livestock Access t		anure In Stream or On Banks		
	Waste Discharge I	Pipes Present			
<u> </u>	Other:				
Habitat Characteristic	s, Aquatic, and Terrestrial	Diversity Description:		•	$\neg$
Habitat ID Number	:	,			
	very low o	durish /de	ry/ next to Rd		
	ľ	, <b>,</b> (			
		·			
Comments:					 
,			<u> </u>	· 	
Stream Quality:		L.	· ·		_ ¬
	] High 📋 Moderate (	₩ Łow			
		••			

☑ Centerline ☐ Re-Route	e 🖽 Access Roa	ad 🔳 Ancillary F	acility 🖺 Transmission	n Line Other MT V 6
Centerline ID:			Project Designated Name:	KXL Phase 4
MTVG				Milepost Enter/Exit:
Date: 5/18/10 Client/	Project Name:			Windpost Eliteri Elita
Team: B10 105	State/County:	ut /nc		Quad Name:
Logbook No.: Logbook Pa	age No.:	Fract No.: MTV6	-MT-MC - 00060	.000
Drawing (Please provide orienta	ation arrow, all feature	es identified, location	to centerline, etc.)	
< N I DOB			where it.	S105 MC001 1 UT Lost Crk. 1 run-named trib
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	- वाश्वास्त			
Gooffsel		4.75%) 	e _	1500' offset
Waterbody Type: Lake	<u> </u>	<u> </u>	m 👩 Ag. Ditch 🔂 Oth	ner
Stream Flow: Fast	Moderate [		ry Slow 📋 None	
	<i>_</i>		Intermittent (Flows	s <3 month None
Z CICI	nnial (Flows year	4.4		only in response to rainfall)
<del></del>				
CLUMPER INC. INC. (41)	NE E	SE S	SW W	NW No Flow
OHWM Width (ft.): 15				·
Sinuosity: Braid	led 🗾 M	-	Straight N/A	·
Stream Width (ft.): 25	-168 to Te	Water S	urface (At Crossing Location	" 15'
Stream Depth (ft.):	· 🗊 1-3 🔞 3-	,	12-18 🔳 18-24 📋 24-3	36 🗍 36-48 🖺 48-60 📋 60+
OHWM Indicators: in cha	s clear no	utural line	on bank	10.7
Bank Height (ft.): Le (Looking Downstream) Rig	ft: 🗍 0-2 🗷	2-4 🗀 4-6 🗈	6-8	
Bank Slope: Le	ft: 4:1 🗷		1:1 Vertical 1:1 Vertical	

Substitute of the and

Qualitat ive Attribut	es
Water Ap pearance:	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats
Clear	Conface South
Sligh tly Turbid	- Voly Tulbid
No Flow	i Other:
Stream Substrate %:	50% day 50% sit
Aquatic Habitats:	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover:
Sand Bar	Graver Rine
Gravel Bar	
Mud Bar	
Undercut Banks	Overhanging Trees/Shrubs None
Aquatic Organisms Ol	bserved: Nove
Riparian Zone:	
Width of Natural Ve	egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - Right -
Vegetative Layers:	Herbs Shrubs Trees Multiple
Significant Bare Ar	eas Within Riparian Zone 📋 Yes 🙎 No 📋 Unknown
Evidence Of Non-E	Buffered Concentrated Flows: Tyes No Unknown
Tributary Condition:	Natural  Artificial (Man-Made)  Manipulated
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting
	Dikes/Berms Excessive Bank Erosion N/A @ Cultured Cost 14
Disturbances:	Manura In Stream or On Banks
	Waster Discharge Pipes Present
	Other:
	Waste Discharge Pipes Present  Other:  Other:  Waste Discharge Pipes Present  Other:
Habitat Characteristic	s, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number	
	Low Structural of spp diversity; get perennial stream in arid grassland.
	and grassland
	data of the control
Comments:	
10 to	al perennial stream - appears that livestock are fenced off
mice such	a perendal streams .
Stream Quality:	7 Ulbelt
Stream Quality:	☐ High ☐ Moderate ☐ Low
· L	
· L	High Moderate DLow

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LOST CREEK 5105 MC002 W105 MC001

Centerline Re-Route Access Road Ancillary F	Facility Transmission Line A Other MTV6
Centerline ID:	Finect Designated Name.
<u>MTV6</u>	KXL Phase 4
Date: 5/18/10 Client/Project Name:	Milepost Enter/Exit:
Team: 105 State/County: MT / MC	Quad Name:
Logbook No.: Logbook Page No.: 3 Tract No.: MT V6	-MT-MC-00060.0
Drawing (Please provide orientation arrow, all features identified, location	to centerline, etc.)
creek water line  150 creek  150	Corps plot  Large  Larg
Waterbody Type: Lake Pond Borrow Pit X Strea	m 🖺 Ag. Ditch 📋 Other
Stream Flow: Stream Flow: Moderate M Slow Ver	y Slow 🖫 None
Flow Type: Perennial (Flows year round)	☐ Intermittent (Flows <3 month ☐ None
Seasonal (Continuous flow ≥ 3 months	) Ephemeral (Flows only in response to rainfall)
Direction of Flow: N NE X E SE S	SW W NW No Flow
OHWM Width (ft.): 6 ang .	
Sinuosity:   Braided   Meandering	Straight N/A
Stream Width (ft.): 20' - wet lands about Water St	urface (At Crossing Location) 51
	12-18 🔲 18-24 📋 24-36 🛄 36-48 🗎 48-60 📋 60+
OHWM Indicators: Clear natural line on 6	16.0
OHWM Indicators: Clear natural line on & Bank Height (ft.): Left: \$\int 0-2  2-4  4-6  \text{\$\frac{1}{2}}\$	panle - salt crusts
OHWM Indicators: Clear natural line on & Bank Height (ft.): Left: \( \infty 0-2  2-4  4-6 \)	ganl - salt crusts ]6-8 []8+

photos: 5105 MC 002 - @ upstream
01 - across
- down stream.

Qualitative Attribut	es
Water Ap pearance:	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats
Clear	Turbiu My Obvious Surface Scum
Slightly Turbid	- Very rational 23 - //
No Flow	Other:
Stream Substrate %:	Cloy: Submitgent > owingent Veq:  Gravel Riffle Deep Pools Bank Root Systems  In-stream Emergent Plant % Cover: Mosaics - 670 - 10070  In-stream Submerged Plant % Cover: Mosaics - 57.
Aquatic Habitats:	Gravel Riffle In-stream Emergent Plant % Cover: MOSNICS - 5 Pockets
Sand Bar	Deep Pools In-stream Submerged Plant % Cover: Wosaics
Gravel Bar	Bank Root Systems Fringing Wetlands Characteristics:
Mud Bar	S Overhanging Trees/Shrubs None wetlands ABUT - WIOSUC OOI
Undercut Banks	
Aquatic Organisms O	bserved: Vovc
Riparian Zone:	Right - 50 /
Width of Natural V	regetation Zone from Edge of Active Original Services
Vogotative Lavers	· DHerbs Shrubs I Trees Multiple
Significant Bare A	reas Within Riparian Zone 📋 Yes 🛛 No 📋 Unknown
Fyidence Of Non-	Buffered Concentrated Flows: Yes No Yunknown
Tributary Condition:	
Channel Condition:	- Downcutting on 2-0 d
Channel Condition.	Channelization/braiding Solutions Basis Engine N/A
	DIKES/BEITIS
Disturbances:	Livestock Access to Riparian Zone Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
	- A walls and Torrectrial Diversity Description:
	ics, Aquatic, and Terrestrial Diversity Description:  er: Meadow (arks - the good regelective diversity &  + reduring blackbirds but no woody/tree ripain an an  observed.
Habitat ID Numbe	" Meadow larks " The wood yn thre comman or
	+ reacting bladesives but he west of the
	observed
Comments:	tream/west and Complex y in perennial, slow-
	Taken / well the control of the cont
F	lowing stream
'	
	·
Stream Quality:	☐ High Moderate ☐ Low
	relatively isolated perennial water source
	wettond veg monoculture of J. Balticus & S. pechinata
1	The section of single of s

numed Stream Lost Creek
\$105 MC 004

☐ Centerline ☐ Re-Route ☐ Access Road ☐ Ancillary	Facility 🖾 Transmission Line 🛣 Other 🏻 TV 6
Centerline ID:	Project Designated Name:
MTV 6	KXL Phase 4
Date: 5/21/10   Client/Project Name: 2011   Frams	Canada Milepost Enter/Exit:
Team: Bir 105 D. Word State/County: Mc Cone Co.	Quad Name:
Logbook No.: Logbook Page No.: Tract No.: UTV	0- MT-MC-000 20,000
Drawing (Please provide orientation arrow, all features identified, location	to centerline, etc.)
Name stream lost Cr	el-
	$\frac{1}{1}$
	onclus 3:1 201
	150 chosen
Waterbody Type: Ako Pand Parrow Dit A Strong	
Lake Folid Bollow Fit Margares	m 🖺 Ag. Ditch 📋 Other
	y Slow None
Flow Type:  ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months	Intermittent (Flows <3 month  None  None  (Flows only in response to rainfall)
Direction of Flow: □ N □ NE □ E MSE↔	SW W NW No Flow
OHWM Width (ft.): 20'	
Character	Straight N/A
Stream Width (ft.): Zo Water S	urface (At Crossing Location) NA - NONE
Character Domath (ff.).	12-18 18-24 24-36 36-48 48-60 60+
OHWM Indicators:	wille, bent/ mutted vegetation. Scour
Bank Height (ft.): Left: 0-2 2-4 4-6	] 6-8
	1:1  Vertical
(Looking Downstream)	1:1 Vertical
phodis; S105 MC QO4_1SE (across)	

phodis; S105 MC 004\_ISE (across)
-28 (doeinstram)
-3N (upsteam)

	·
Qualitative Attribut	es 5105 MC 004 con
Water Ap pearance:	J105 IN C 00 (
Clear	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats
Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum
No Flow	Other:
Stream Substrate %:	
Aquatic Habitats:	
Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover:
Gravel Bar	Deep Pools
Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:
Undercut Banks	☐ Overhanging Trees/Shrubs X None
Aquatic Organisms Ob	served: Mosquitos Rawid today -
Riparian Zone:	· · ·
Width of Natural Ve	getation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 15 'Right - 15'
Vegetative Layers:	Herbs M Shrubs Trees Multiple - Snow berry (Symphic carpas sp)  eas Within Riparian Zone Yes No Unknown - a cristatum)
Significant Bare Are	eas Within Riparian Zone Yes No Unknown - A Cristatum
Evidence Of Non-B	uffered Concentrated Flows: ☐ Yes ☐ No M Unknown
Tributary Condition:	Natural Artificial (Man-Made) Manipulated
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting
	Dikes/Berms Excessive Bank Erosion N/A
Disturbances:	Livestock Access to Riparian Zone Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other: Shoks to be undisturbed
	s, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number:	Some Symphio carpas sign in daninge for cover
	mostly agrapyon cristatur
	must g the contract of
Comments:	
1	
Street Ovelite	
Stream Quality:	High ☐ Moderate ☐ Low . NA - No flow
_	High Moderate Low NA - No flow
_	High Moderate Low NA - No flow  To lost creek is uphimical @ best seemed
_	High Moderate Low. NA - No flow  To lost creek is uphumeral a best see scowed  un it does flow only in suspense to beauty rain, etc.
_	High Moderate Low. NA - No flow  To lost creek is uphumural a best seemed  un it does flow only in suspense to heavy rain, etc.
_	High Moderate Low. NA - No flow  To lost creek is uphimical a best see scanned  un it does flow only in suspense to heavy rain, etc.  re matted vegetation
_	High Moderate Low. NA - No flow  To lost creek is ephineral & best see secured  un it does flow only in suspense to beauty rain, etc.  re matted regetation
L_	High Moderate Low. NA - No flow  To lost creek is epiniminal a best see scanned  un it does flow only in suspense to beauty rain, etc.  re matted vegetation
Ĺ_	High Moderate Low. NA - No flow  To lost creek is uphimical a best see scanned  un it does flow only in suspense to beauty rain, etc.  re matted vegetation

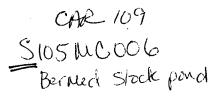
·

CAR 109 S105MC 005

Centerline Re-Route Access Road Ancillary Facility Transmission Line Other MTV 6	
Centerline ID: Project Designated Name:	
Date: 5/26/10 Client/Project Name:  Trans Canada Milepost Enter/Exit: No 4483  Team:  Bio 105 State/County: McCore (c., M)  Quad Name:	
Logbook No.: Logbook Page No.: Tract No.:  105 Cultivate 5045.	
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)	
SIOSPICOOS  SIOSPICOOS  E ISO OFFSET	
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit ☑ Stream ☐ Ag. Ditch ☐ Other	
	solz
Flow Type: Perennial (Flows year round) Intermittent (Flows <3 month None	
Seasonal (Continuous flow ≥ 3 months) ☐ Ephemeral (Flows only in response to rainfall)  Direction of Flow: ☐ N ☐ N ☐ N ☐ N ☐ N ☐ N ☐ N ☐ N ☐ N ☐	- 855
Direction of Flow: N NE DE DSE DS DW WWW MNO Flow to bout the cons Dw but the width (ft.): 5'	ا ال ا
Sinuosity: Braided Meandering Straight N/A	
Stroom Width (ft ): Water Surface (At Crossing Location) 2	
Stream Depth (ft.): 0 141-3 03-6 0 6-12 0 12-18 0 18-24 0 24-36 0 36-48 0 48-60 0 60+	
OHWM Indicators: Scoop I Bent Mailed Voge taken	
Bank Height (ft.):       Left: № 0-2 □ 2-4 □ 4-6 □ 6-8 □ 8+         (Looking Downstream)       Right: № 0-2 □ 2-4 □ 4-6 □ 6-8 □ 8+	
Bank Slope: Left:	

Photos: S105 MC005\_001SE (UP) \_002N (across) \_003NW (down)

Qualitat ive Attribut	es
Water Ap pearance:	
Clear	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats
Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Ø Obvious Surface Scum
No Flow	Other: op panded water & coivert auther-otherwise No frow in
Stream Substrate %:	757. day 2570 veg
Aquatic Habitats:	
Sand Bar	☐ Gravel Riffle
Gravel Bar	Deep Pools In-stream Submerged Plant % Cover:
Mud Bar	Bank Root Systems Fringing Wetlands Characteristics:
Undercut Banks	Overhanging Trees/Shrubs None
Aquatic Organisms Ob	served: NONE
Riparian Zone:	
Width of Natural Ve	egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 5' Right - 5'
Vegetative Lavers:	Herbs Shrubs Trees Multiple
	eas Within Riparian Zone 📋 Yes 🚺 No 📋 Unknown
Evidence Of Non-B	uffered Concentrated Flows: Yes No 🙀 Unknown
Tributary Condition:	
Channel Condition:	
	☐ Channelization/Braiding ☐ Unnatural Straightening ☐ Downcutting / ☐ Dikes/Berms ☐ Excessive Bank Erosion ☐ N/A
Disturbances:	
Distuibances.	Livestock Access to Riparian Zone Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
Habitat Characteristics	s, Aquatic, and Terrestrial Diversity Description:
	This small but. Spean has low value - yet is asset.
	y berned open mater "pond" = 3 to epopadient.
	<b>₩</b> .
Comments:	
	·
r	
Stroom Ovelity	
Stream Quality:	High Moderate Low - See cherre
	·



☐ Centerline ☐ Re-Route ☐ Access Road ☐ Ancillary F	acility 🔲 Transmission Line 🖫 Other $\mu \mathcal{T} \mathcal{V} \varphi$
Centerline ID:	Project Designated Name:
	<u> </u>
Date: 5/26/10   Client/Project Name: Traw   Trains Co	Milepost Enter/Exit:
	O. I.Marra an
Logbook No.: Logbook Page No.: Tract No.:	Me Co.
Logbook No.: Logbook Page No.: Tract No.:  105 Buffalo 5.53	, Tave.
Drawing (Please provide orientation arrow, all features identified, location to	o centerline, etc.)
\$ 105 MC00\$	CARIO9 to MTVC NT
Waterbody Type: Ako M Pond E Porrow Dit E Stroom	Ma Ditah E Other
Stream Flow: Stream Stream Flow: Moderate Slow Slow	
	Slow None
Flow Type: (65) Perennial (Flows year round)	☐ Intermittent (Flows <3 month 1) / A ☐ None
Direction of Flows	Ephemeral (Flows only in response to rainfall)
Direction of Flow: N NE E SE S	☐ Ephemeral (Flows only in response to rainfall) ☐ SW ☐ W ☐ NW ☐ No Flow ►
Direction of Flow: N NE E SE S	SW NW No Flow
OHWM Width (ft.):  Sinuosity:  Braided  Meandering  S	SW NW No Flow NA
Direction of Flow: N NE E SE S  OHWM Width (ft.): V A  Sinuosity: Braided Meandering S  Street Width (ft.):	Traight N/A N/A
Direction of Flow: N NE E SE S  OHWM Width (ft.): VA  Sinuosity: Braided Meandering S  Stream Width (ft.): VA  Water Surf	traight N/A N/A  ace (At Crossing Location)
Direction of Flow: N NE E SE S  OHWM Width (ft.): VA  Sinuosity: Braided Meandering S  Stream Width (ft.): VA  Water Surf	Traight N/A N/A
Direction of Flow: N NE E SE S  OHWM Width (ft.): VA  Sinuosity: Braided Meandering S  Stream Width (ft.): VA  Water Surf  Stream Depth (ft.): VA  OHWM Indicators: VA	Traight N/A N/A (ace (At Crossing Location) N/A (18 118-24 11 24-36 11 36-48 11 48-60 11 60+
Direction of Flow: N NE E SE S  OHWM Width (ft.): VA  Sinuosity: Braided Meandering S  Stream Width (ft.): VA  Water Surf  Stream Depth (ft.): VA  OHWM Indicators: VA  Bank Height (ft.): Left: 0-2 2-4 4-6 6 6	traight N/A N/A ace (At Crossing Location) N/A -18 18-24 24-36 36-48 48-60 60+
Direction of Flow: N NE E SE SE  OHWM Width (ft.): VA  Sinuosity: Braided Meandering S  Stream Width (ft.): VA  Water Surface Stream Depth (ft.): VA  Stream Depth (ft.): VA  Bank Height (ft.): Left: 0-2 2-4 4-6 6  Right: 0-2 2-4 4-6 6	Traight N/A N/A  ace (At Crossing Location) N/A  -18 18-24 24-36 36-48 48-60 60+  6-8 8+ N/A  6-8 8+ N/A
Direction of Flow: N NE E SE S  OHWM Width (ft.): VA  Sinuosity: Braided Meandering S  Stream Width (ft.): VA  Water Surf  Stream Depth (ft.): VA  OHWM Indicators: VA  Bank Height (ft.): Left: 0-2 2-4 4-6 6 6	Traight N/A NA ace (At Crossing Location)  -18 18-24 24-36 36-48 48-60 60+  6-8 8+ NA 6-8 8+ NA 1:1 Vertical NA

Qualitative Attribu	ites
Water Ap pearance:	
Clear	Turbid Sheen on Surfac Floating Algalmats
Slightly Turbid	Very Turbid Greenish Color Obvious Surface Scum
No Flow	The Check brown Color
Stream Substrate %:	cent see- (Kely Clay
Aquatic Habitats:	
Sand Bar	☐ Gravel Riffle \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \
Gravel Bar	Deep Pools In-stream Submerged Plant % Cover:
Mud Bar	☐ Bank Root Systems
Undercut Bank	s Overhanging Trees/Shrubs None of Sticks Skick-
Aquatic Organisms C	Observed: None
Riparian Zone:	
•	/egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 🍫 Right -
•	M Harba C Chruha C Traca C Multiple
	: ₩ Herbs Shrubs Trees Multiple reas Within Riparian Zone Yes No Unknown
	Buffered Concentrated Flows: Yes No Unknown
Tributary Condition:	
	Natural   Artificial (Man-Made)   Manipulated   Berned / Dikes
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting
	☐ Excessive Bank Erosion ☐ N/A
Disturbances:	☑ Livestock Access to Riparian Zone ☐ Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
	·
	cs, Aquatic, and Terrestrial Diversity Description:
Habitat ID Numbe	Berned Stock pond u v 5' worker Now. Tikely dries to at completely, in aug.
	service Space partor of a contract of
	dries in at completely in aug.
Comments:	
L	
Stream Quality:	☐ High Moderate ☐ Low Fond Sypports Songloivels -
Despert	- I the total and the total an
'	pard littly dries ches. killdear + readoulark. out during July/Caus. other songbirds heard
	out during July/ Caux. other songbirds heard
	) [1- ). (1-1)

5/05 MC 007 ephy ent. drawinge

Access Road Ancil	lary Facility Transmission Line Other MTV 6
Centerline  Re-Route  Access Road  Ancil	Project Designated Name: KXL Phuse IV
	Address of Enter/Evity
Date: 5/28/10   Client/Project Name: now/n	Quad Name:
	e Co, MT  Quad Name:
Logbook No.: Logbook Page No.: Tract No.:	L-MT-MC-00820.000
Drawing (Please provide orientation arrow, all features identified, lo	ocation to centerline, etc.)
Cagarite de la company de la c	EURENCE PRICESCORE.
	t 150 april man of the
Waterbody Type: Lake Pond Borrow Pit	Stream Ag. Ditch Other
	☑ Very Slow ☑ None
Flow Type: Perennial (Flows year round)	☐ Intermittent (Flows <3 month ☐ None nonths) ☐ Ephemeral (Flows only in response to rainfall)
Direction of Flow: N NE E SE	S SW W NW No Flow
OHWM Width (ft.): No offun identificable	ـــ ب هــــــــــــــــــــــــــــــــ
Sinuosity: Braided A Meandering	☐ Straight ☐ N/A
	Vater Surface (At Crossing Location) Noショ
Stream Depth (ft.): 0 1-3 3-6 6-1:	2 12-18 11 18-24 11 24-36 11 36-48 11 48-60 11 60+ NOVE
OHWM Indicators: No Offwire	
Bank Height (ft.): Left: 0-2 P2-4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4	
	:1 🔲 1:1 🔲 Vertical

photos: SIOSMC007\_SE \_SW \_ NE

5105MC 010 eph. dranage way

☐ Centerline ☐ Re-Route ☐ Access Road ☐ Ancillary	Facility Transmission Line Cother MTUC
Centerline ID:	Project Designated Name:
	KXL Phose IV Steele City Seg.  Milepost Enter/Exit:
Date: 6/4/10   Client/Project Name:	
Team: State/County:	Quad Name:
Team: Prio 105 State/County: Ucche Co.	. WT
Logbook No.: Logbook Page No.: Tract No.:	
	- po535.000
Drawing (Please provide orientation arrow, all features identified, location	n to centerline, etc.)
	<b>↑</b>
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\	( ),
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1	L.K
t. 6. 5	
(` ~ ~	holos
l	
l mou	•
` 6	•
Waterbody Type: Plake Pond E Power Dit M Street	
Etrope Flows	
P. L	ry Slow 🙀 None
Flow Type: Perennial (Flows year round)	☐ Intermittent (Flows <3 month ☐ None
	Ephemeral (Flows only in response to rainfall)
Direction of Flow: N NE ME SE SE	SW W NW No Flow
OHWM Width (ft.): No continuous of w M -	Scour lines on outer banks; grasse sua
Sinuosity: Braided Meandering	Straight N/A
Stream Width (ft.): \S' Water St	urface (At Crossing Location)
	12-18 18-24 24-36 36-48 48-60 60+
OHWM Indicators: NONE	
	6-8 8+
(Lealing Doumetroom)	] 6-8
	1:1 Vertical
(Looking Downstroam)	1:1 Vertical
7 Taylor 1 7 2 1 1 2 1 7 2 1 1	

protes: S105MC010 \_ S (across)
\_ W (upopd)

Qualitative Attribut	es
Water Appearance:	
Clear	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats
Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum
No Flow	Other:
Stream Substrate %:	grass - Navgeland grassis
Aquatic Habitats:	
Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover:
Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plant % Cover:
Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:
Undercut Banks	☑ Overhanging Trees/Shrubs 🌠 None
Aquatic Organisms Ob	served: PONE
Riparian Zone:	
Width of Natural Ve	egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 25' Right - 25'
1	Herbs Shrubs Trees Multiple
, –	eas Within Riparian Zone 📋 Yes 🛂 No 📋 Unknown
	uffered Concentrated Flows: Yes No Unknown
Tributary Condition:	
	Natural
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting
	☐ Dikes/Berms ☐ Excessive Bank Erosion ☐ N/A Nove of these
Disturbances:	Livestock Access to Riparian Zone  Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
i	s, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number:	
1	
04	ery low spp. + Structural diversity
Comments:	
Stream Quality:	High ☐ Moderate ★ Low
	. — — — — — — — — — — — — — — — — — — —
ephin	unal @ best - Steep ensional banks
]	SITY SUBSCRIPTION BOUNCS
·[	

# Waterbody Data Form S106 FA006 - South Fork Coal Bank Creek

☐ Centerline	y Facility 🔟 Transmission Line 🗎 Other
Centerline ID: 3/26/10	Project Designated Name: KILP, peline - Phase IV
Date: 6/12/10 Client/Project Name: Trans Canad	la Trow-KXL Milepost Enter/Exit: =279.5
Team: B106 State/County: MT - Fa	llon Quad Name: NA
Logbook No.: 2 Logbook Page No.: Tract No.:	MT-FA-00966
Drawing (Please provide orientation arrow, all features identified, location	on to centerline, etc.)
N Order of Artes	Photoso collw up 0025 ac 0035Edn
	10-2 81 4:1
Porture /	Downstream
Waterbody Type: Lake Pond Borrow Pit Stre	am 👩 Ag. Ditch 👩 Other
0/	ery Slow None
Flow Type: Perennial (Flows year round)	☐ Intermittent (Flows <3 month ☐ None s) ☐ Ephemeral (Flows only in response to rainfall)
Direction of Flow: N NE ME SE	
OHWM Width (ft.):	
Sinuosity: Braided Meandering	] Straight ☐ N/A
	Surface (At Crossing Location)
	12-18
OHWM Indicators: Scour, Bent veg.	
Bank Height (ft.): Left: 📆 0-2 🖺 2-4 🗀 4-6	6-8 8+
(Looking Downstream) Right: 🗷 0-2 🗀 2-4 🖾 4-6	□ 6-8 □ 8+
	1:1  Vertical
(Looking Downstream) Right: A 4:1 3:1 2:1	1:1

Qualitative Attribut	es .		5/06	FA006
Water Ap pearance:				
[X Clear	Turbid	Sheen on Surfac	Floating Algalmats	,
Slightly Turbid	Very Turbid	Greenish Color	Obvious Surface Scum	
☐ No Flow	Other:			
Stream Substrate %:	Clay loan			
Aquatic Habitats:	<i>O</i> .	. ,		
Sand Bar	Gravel Riffle		Emergent Plant % Cover: (5	% Juneus
Gravel Bar	Deep Pools		Submerged Plant % Cover:	
Mud Bar	Bank Root Systems		etlands Characteristics:	
Undercut Banks	Overhanging Trees	/Shrubs 🔃 None		
Aquatic Organisms Ob	served:			
Riparian Zone:				
Width of Natural Ve	getation Zone from Edge	e of Active Channel out	t to Flood Plain (ft): Left - 🤝	Right - 5
Vegetative Layers:	Herbs Shrubs	Trees 🖂 Multiple		
Significant Bare Are	as Within Riparian Zone	Yes XNo	Unknown	
Evidence Of Non-B	uffered Concentrated Flo	ws: 🖂 Yes 📆 No 🖫	Unknown	
Tributary Condition:	Natural A	rtificial (Man-Made)	Manipulated	
Channel Condition:	Channelization/Braid			
	Dikes/Berms	Excessive E		
Disturbances:	Livestock Access to	Riparian Zone	anure In Stream or On Banks	
	☐ Waste Discharge Pig	•		
	Other:	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	, Aquatic, and Terrestrial Div	versity Description:		
Habitat ID Number:	NA			
	/ V / \			
Comments:	ted/western wt	ectoross, B	lugion, Sagebrus	4
	, -	1	July sugersus	A < .
1 /	1 - 1 - 1			
rangland/	Pasturi . Birds High Moderate 🗆	in ara, of	eonghern.	
Stream Quality:	High Moderate	Low / 111	<i></i>	
	W. Wassian	Cattle	iccess.	

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# Waterbody Data Form Stob FA007 - Boxelder Creek

☐ Centerline MRe-Route ☐ Access Road ☐ Ancillary	Facility Transmission Line Other
Centerline ID: 3/26/10	Project Designated Name: KILP, pelve-Phase IV
Date: 6/12/10 Client/Project Name: TransCanada	Milepost Enter/Exit:
Team: B10 State/County: MT-Fallo	Quad Name: NA
Logbook No.: 2 Logbook Page No.: — Tract No.: ML-,	MT-PA-01030
Drawing (Please provide orientation arrow, all features identified, locatio	
Porture protect	Pactos: 001 Swap 002 Sac 063 NE dn 1810 1810 1810 1810 1810 1810 1810 181
a	Downstream
Waterbody Type: Lake Pond Borrow Pit Stream	,
Stream Flow: Fast Moderate Slow Ve	,
Stream Flow: Flow Type: Perennial (Flows year round)	ım 👩 Ag. Ditch 👩 Other
Stream Flow: Flow Type: Perennial (Flows year round)	Im
Stream Flow: Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months	Im
Stream Flow: Fast Moderate Slow Ve Flow Type: Perennial (Flows year round) Seasonal (Continuous flow ≥ 3 months  Direction of Flow: N NE E SE S  OHWM Width (ft.): /5 /  Sinuosity: Braided M Meandering	Im
Stream Flow: Fast Moderate Slow Ve Flow Type: Perennial (Flows year round) Seasonal (Continuous flow ≥ 3 months  Direction of Flow: N NE E SE S  OHWM Width (ft.): /5 /  Sinuosity: Braided M Meandering	am Ag. Ditch Other  Ty Slow None  Intermittent (Flows <3 month None  Ephemeral (Flows only in response to rainfall)  S'V W NW NO Flow  (Straight N/A
Stream Flow: Fast Moderate Slow Verification of Flow: N NE E SE SCOHWM Width (ft.):  Sinuosity: Braided Meandering Stream Width (ft.): 0 1-3 3-6 6-12	am
Stream Flow: Fast Moderate Slow Ve  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months  Direction of Flow: N NE E SE S  OHWM Width (ft.): /5 (  Sinuosity: Braided Meandering Stream Width (ft.): 705-65 (  Water S	Ag. Ditch Other  Ty Slow None  Intermittent (Flows <3 month None  Ephemeral (Flows only in response to rainfall)  S'V W NW No Flow  (Straight N/A  Purface (At Crossing Location)  12-18 18-24 24-36 36-48 48-60 60+
Stream Flow: Fast Moderate Slow Verification of Flow: N NE E SE S  OHWM Width (ft.): Sinuosity: Braided Meandering Stream Width (ft.): OHWM Indicators: Water S  Bank Height (ft.): Left: □ 0-2 □ 2-4 □ 4-6 □	Im Ag. Ditch Other  Ty Slow None  Intermittent (Flows <3 month None  Ephemeral (Flows only in response to rainfall)  S'V W NW No Flow  (Straight N/A  urface (At Crossing Location)  12-18 18-24 24-36 36-48 48-60 60+  Sorting   bentry  6-8 88
Stream Flow: Fast Moderate Slow Verification of Flow: N PANE E SE S  OHWM Width (ft.): /5 /  Sinuosity: Braided Meandering Stream Width (ft.): /5 /  Stream Depth (ft.): 0 1-3 3-6 6-12 0  OHWM Indicators: Unack Line Scaling (Looking Downstream)  Early Moderate Slow Verification	Ag. Ditch Other  Ty Slow None  Intermittent (Flows <3 month None  Ephemeral (Flows only in response to rainfall)  S'V W NW No Flow  (Straight N/A  Purface (At Crossing Location)  12-18 18-24 24-36 36-48 48-60 60+
Stream Flow: Fast Moderate Slow Verification of Flow: N Perennial (Flows year round)    Seasonal (Continuous flow ≥ 3 months)   Direction of Flow: N PANE E SE SE SO	Im Ag. Ditch Other  Ty Slow None  Intermittent (Flows <3 month None  Ephemeral (Flows only in response to rainfall)  S'V W NW No Flow  (Straight N/A  urface (At Crossing Location)  12-18 18-24 24-36 36-48 48-60 60+  String   Lentry  6-8 X8+

Qualitative Attribute	95 S106FA007
Water Ap pearance:	
Clear	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats
Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum
☐ No Flow	Other:
Stream Substrate %:	Gravel 50% , clay 50%
Aquatic Habitats:	The state of the s
☐ Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover:
💢 Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plant % Cover:
Mud Bar ■	Bank Root Systems Fringing Wetlands Characteristics:
Undercut Banks	Overhanging Trees/Shrubs None
Aquatic Organisms Ob	served: WA
Riparian Zone:	
Width of Natural Ve	getation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 5 Right -/5
Vegetative Layers:	Herbs Shrubs Trees Multiple
Significant Bare Are	as Within Riparian Zone
Evidence Of Non-Bu	uffered Concentrated Flows: 🖂 Yes 📆 No 🖂 Unknown
Tributary Condition:	Natural _ Artificial (Man-Made) _ Manipulated
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting
	Dikes/Berms
Disturbances:	Livestock Access to Riparian Zone Manure In Stream or On Banks
	Waste Discharge Pipes Present
	Other:
1	
Habitat Characteristics	, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number:	$\wedge M$
Bir	de/Pronghorn around area. we/Mangeland >alfalfa, Brome, bluegiass, Sages
Comments: A	
Pasti	we Mangeland Talfalfer, Brome, blugioss, Sages
	Meargiasses.
Stream Quality:	High AMadarata Ellow
· U	High Moderate Low
	No Riparion zone or
	1



Contailing A Double Co. D. L. C. M. M. S. M. C. M. C.
Centerline Re-Route Access Road Ancillary Facility Transmission Line Other
Centerline ID: 3/26/10 Project Designated Name: RXC Pipe I'me - Phase IV
Date: 6/11/10 Client/Project Name: TransCanada Trow-KXL Milepost Enter/Exit: 255/256
Team: B106 State/County: MT- Fallon Quad Name: WA
Logbook No.: 2 Logbook Page No.: Tract No.: a Ml Revente 255/256
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)
Photose ooi Ne up Ood Niw ac 003 Si dn
Jay 25 rentical
Downstream Soo!
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit X Stream ☐ Ag. Ditch ☐ Other
Stream Flow: Fast Moderate Slow Very Slow None
Flow Type: Perennial (Flows year round) Intermittent (Flows <3 month None
Seasonal (Continuous flow ≥ 3 months)
Direction of Flow: NE DE
OHWM Width (ft.):
Sinuosity: Braided Meandering Straight N/A
Stream Width (ft.): 106 ~ 5 Water Surface (At Crossing Location)
Stream Depth (ft.): 24-36 36-48 48-60 60+
OHWM Indicators: Scour, bent veg
Bank Height (ft.): Left: 0-2 2-4 0 4-6 6-8 8+
Rignt: 8+
Bank Slope: Left: 4:1 3:1 2:1 1:1 A Vertical (Looking Downstream)

5106FA007 **SUMS (ADOS** 

Qualitative Attribute	es .			State (Aloos		
Water Ap pearance:			·			
}		Sheen on Surfac	Floating Algalmats			
	☐ Very Turbid	Greenish Color	Obvious Surface Scu	m		
IXNo Flow	Other: No water					
Stream Substrate %:	bstrate %: Standy Clay loan					
Aquatic Habitats:	•					
Sand Bar	Gravel Riffle In-stream Emergent Plant 30% Cover: Grasses, carer, blueg					
Gravel Bar	Deep Pools	🗐 In-stream S	Submerged Plant % Cove	er:		
☐ Mud Bar	Bank Root System	s 🔲 Fringing W	etlands Characteristics:			
Undercut Banks	Overhanging Trees	s/Shrubs 🔝 None				
Aquatic Organisms Obs	erved: NA					
Riparian Zone:				,		
Width of Natural Veg	etation Zone from Edg	e of Active Channel out	to Flood Plain (ft): Left -	5' Right - 5'		
Vegetative Layers:	Herbs 🛚 Shrubs 🛭	Trees 🖪 Multiple	•			
		e ∏Yes ⊠No ∏U	Inknown			
Evidence Of Non-But	ffered Concentrated Fl	ows: [] Yes   No []	Unknown			
Tributary Condition:	<del></del>	rtificial (Man-Made)	<del></del>			
Channel Condition:	Condition: Channelization/Braiding Unnatural Straightening Downcutting					
!	_ ☐ Dikes/Berms	Excessive B				
Disturbances	Livestock Access to		nure In Stream or On Ban	ke.		
,	☑ Waste Discharge Pi	<i>y</i> \	Hale III officially of Officially			
}	☐ Other:	pes i resent				
L L						
Habitat Characteristics,	Aquatic, and Terrestrial Di	versity Description:	<del></del>			
Habitat ID Number:	111					
/	VIT.					
Mangeland-Wheatgross, Bluegrass, Societrush, Segewort.						
Comments: This	is the head "	raters of the	Stream, there	is a cink		
Rangeland Wheatgross, Bluegrass, Sogebrush, Sogewort.  Comments: This is the read waters of the Stream, there is a sink hale @ where the readout is and starts w/in the						
we a where the revacus is when stars with the						
surve	Survey Corridor. Banks are Sloughing off.					
Stream Quality:	digh E Madarata A	1				
Stream Quanty.	ligh 🗌 Moderate 🛱	LOW				

# Waterbody Data Form S/06 MC 003 Gyp Creek

☐ Centerline	cility 🔟 Transmission Line 🖺 Other				
Centerline ID:	Project Designated Name:				
3/26/10	KXL Phase IV				
Date: 6 / Client/Project Name:	Milepost Enter/Exit:				
6/19/10 Trans Canada					
Team: B106 State/County: MT-McC	Quad Name: NA				
Loghook No Loghook Do No					
	-MT-MC-60200				
Drawing (Please provide orientation arrow, all features identified, location to					
A 4. X	Proto2: 001 SW, 002W				
	003118				
Mode 3					
/* (1/ , /	1.4.4				
	4 1 23				
	14-6				
( ) Pasture	Vill KS				
	2:1 0-2				
(John Stream					
\ con\	Down Stream				
500'	Down stream				
1 500'	Down stream				
	Dourn Stream  Ag. Ditch Other				
Waterbody Type: Lake Pond Borrow Pit Stream	Oobin Stream  Ag. Ditch Other  Slow Ar None				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S	Slow None				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)	Slow None  Intermittent (Flows <3 month None				
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit 🔀 Stream  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Very S  Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months)	Slow ⚠ None  ☐ Intermittent (Flows <3 month ☐ None  ⚠ Ephemeral (Flows only in response to rainfall)				
Waterbody Type: Lake Pond Borrow Pit  Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)     Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S	Slow None  Intermittent (Flows <3 month None				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)	Slow None Intermittent (Flows <3 month None Ephemeral (Flows only in response to rainfall) SW W NW NO Flow				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S  OHWM Width (ft.): 3  Sinuosity: Braided Meandering St	Slow None Intermittent (Flows <3 month None Ephemeral (Flows only in response to rainfall) SW W NW NO Flow				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S  OHWM Width (ft.): 3  Sinuosity: Braided Meandering St  Stream Width (ft.): ToB = 25  Water Surfa	Slow None  ☐ Intermittent (Flows <3 month ☐ None  ☐ Ephemeral (Flows only in response to rainfall)  ☐ SW ☐ W ☐ NW ☐ No Flow  raight ☐ N/A  ce (At Crossing Location) Pools ≈ 2				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S  OHWM Width (ft.): 3  Sinuosity: Braided Meandering St  Stream Width (ft.): Water Surfa  Stream Depth (ft.): 0 / 1-3 3-6 6-12 12-	Slow None Intermittent (Flows <3 month None Ephemeral (Flows only in response to rainfall) SW W NW NO Flow				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S  OHWM Width (ft.):  Sinuosity: Braided Meandering St  Stream Width (ft.): Water Surfa  Stream Depth (ft.): 0 0 0 1 1-3 3-6 6-12 12-  OHWM Indicators: Scown, But reg.	Slow None  ☐ Intermittent (Flows <3 month ☐ None ☐				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S  OHWM Width (ft.):  Sinuosity: Braided Meandering St  Stream Width (ft.): Water Surfa  Stream Depth (ft.): 0 / 6 / 1 - 3 = 3 - 6 = 6 - 12 = 12 - 12 - 12 - 12 - 12 - 12 - 12	Slow None  ☐ Intermittent (Flows <3 month ☐ None ☐				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S  OHWM Width (ft.):  Sinuosity: Braided Meandering St  Stream Width (ft.): Water Surfa  Stream Depth (ft.): 0 0 0 1 1-3 3-6 6-12 12-  OHWM Indicators: Scown, But reg.	Slow None  ☐ Intermittent (Flows <3 month ☐ None  ☐ None				
Waterbody Type: Lake Pond Borrow Pit Stream  Stream Flow: Fast Moderate Slow Very S  Flow Type: Perennial (Flows year round)  Seasonal (Continuous flow ≥ 3 months)  Direction of Flow: N NE E SE S  OHWM Width (ft.):  Sinuosity: Braided Meandering St  Stream Width (ft.): Water Surfa  Stream Depth (ft.): 0 / 6 12 12-0  OHWM Indicators: Score Bank Height (ft.): Left: 0-2 2-4 24-6 66-66	Slow None  ☐ Intermittent (Flows <3 month				

Qualitative Attribu	stes SIOHMCOd3				
Water Ap pearance:					
Clear	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats				
Sligh tly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum				
No Flow	Other: Paols-Shallow				
Stream Substrate %:	Silty Clay loan				
Aquatic Habitats:					
Sand Bar	☐ Gravel Riffle In-stream Emergent Plant % Cover: 25%				
Gravel Bar	Deep Pools Shallow In-stream Submerged Plant % Cover:				
Mud Bar	Bank Root Systems Fringing Wetlands Characteristics: Juneus, Carex, Soils hydri				
Undercut Banks	☐ Bank Root Systems ☐ In-stream Submerged Plant % Cover: ☐ Bank Root Systems ☐ Fringing Wetlands Characteristics: Juncus, Carex, Soils hydros ☐ Overhanging Trees/Shrubs ☐ None ☐ 2' from Channel				
Aquatic Organisms O	bserved: NA				
Riparian Zone:					
Width of Natural V	egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 5' Right - <				
Vegetative Layers:	Herbs Shrubs Trees Multiple				
	reas Within Riparian Zone Yes No Unknown				
Evidence Of Non-E	Buffered Concentrated Flows: Yes No Unknown				
Tributary Condition:	Natural Artificial (Man-Made) Manipulated				
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting				
	☐ Dikes/Berms ☐ Excessive Bank Erosion ♠ N/A				
Disturbances:					
	Waste Discharge Pipes Present				
	Other:				
Habitat Characteristic	s, Aquatic, and Terrestrial Diversity Description:				
Habitat ID Number					
	$\mathcal{N}\mathcal{N}$				
Comments: V)					
Pas	the > reedlegiass, three aun, wheat wass Dluegiass,				
Pastine > reedlegias, three awn, wheatgrass, bluegiass, teatgrass.					
Stream Quality:	High Madage Silver				
	High Moderate Low				
	Cattle access.				

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# Waterbody Data Form Creek-byto 64002 Sto 6 14013

☐ Centerline Re-Route ☐ Access Road ☐ Ancillary Facility ☐ Transmission Line ☐ Other	
Centerline ID: 3/26/10 Project Designated Name: KXL - Phase IV	
5/31/10 TransCanada - Irow - KAL = 23.4	
Team: 6106 State/County: MT-Valley-Phillips Quad Name: NA	
Logbook No.: 1 Logbook Page No.: Tract No.: ML-MT-PH-10234 Photos: 001NE, 0026	,0035W
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)	
Posture protogram of the stand	
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit M Stream ☐ Ag. Ditch ☐ Other	
Stream Flow: Stow Slow None	
Flow Type: Perennial (Flows year round)	
Seasonal (Continuous flow ≥ 3 months) ☐ Ephemeral (Flows only in response to rainfall)	
Direction of Flow: N NE E SE SE SW W NW No Flow	
OHWM Width (ft.): 30	
Sinuosity: Braided Meandering Straight N/A	
Water Surface (At Crossing Location)	
Stream Width (ft.): To 15 = 70       Water Surface (At Crossing Location) 25 I         Stream Depth (ft.): 0 0 1-3 3-6 0-12 0 12-18 0 18-24 0 24-36 0 36-48 0 48-60 0 60+	
Stream Width (ft.): 1015 = 70   Water Surface (At Crossing Location) 251  Stream Depth (ft.): 0 1-3 23-6 6-12 12-18 18-24 24-36 36-48 48-60 60+  OHWM Indicators: Scout, Bent veg  Bank Height (ft.): Left: 0-2 24 4-6 6-8 8+	
Stream Width (ft.):       Totb = 70       Water Surface (At Crossing Location)       251         Stream Depth (ft.):       0       1-3       3-6       6-12       12-18       18-24       24-36       36-48       48-60       60+         OHWM Indicators:       Scour       Bent veg	
Stream Width (ft.): 1015 = 70   Water Surface (At Crossing Location) 251  Stream Depth (ft.): 0 1-3 3-6 6-12 12-18 18-24 24-36 36-48 48-60 60+  OHWM Indicators: Scour, Bent veg  Bank Height (ft.): Left: 0-2 24 4-6 6-8 8+	

·				O WI MILLIZ	
Qualitative Attribute	es			S106 PH013	
Water Ap pearance:	A/			,	
Clear	Turbid	Sheen on Surfac	Floating Algalmats		
Slightly Turbid	☐ Very Turbid	Greenish Color	Obvious Surface Scur	n	
☐ No Flow	Other: Brown				
Stream Substrate %:	Silty Clay 10	0%			
Aquatic Habitats:		, ,	-		
Sand Bar	Gravel Riffle		Emergent Plant % Cove		
Gravel Bar	Deep Pools		Submerged Plant % Cove	r:	
☐ Mud Bar	Bank Root Systen	ns 🔲 Fringing W	etlands Characteristics:		
Undercut Banks	Overhanging Tree	s/Shrubs 🔲 None			
Aquatic Organisms Ob	served: //A				
Riparian Zone:					
Width of Natural Ve	getation Zone from Ed	ge of Active Channel out	t to Flood Plain (ft): Left - 🤇	Right - 5	
Vegetative Layers:	Herbs Shrubs	Trees 🔳 Multiple			
Significant Bare Are	as Within Riparian Zor	ne 🔲 Yes 🌠 No 🛄 '	Unknown		
Evidence Of Non-Bu	uffered Concentrated F	lows: Yes No	<b>X</b> Unknown		
Tributary Condition:	Watural 🖸	Artificial (Man-Made)	] Manipulated		
Channel Condition:	Channelization/Bra	iding 🔲 Unnatural S	traightening 📋 Downcut	ting	
	Dikes/Berms	Excessive E	Bank Erosion		
Disturbances:	Livestock Access to	o Riparian Zone	anure In Stream or On Banl	KS <sup>-</sup>	
	Waste Discharge Pipes Present				
	Other:				
	Other.	· · · · · · · · · · · · · · · · · · ·			
Habitat Characteristics	, Aquatic, and Terrestrial I	Diversity Description:			
Habitat ID Number:	NA				
	,				
Abutts 6	Jetland on	Left lank-l	200AV2014		
Comments:		1 1	114	0 1	
Willo	us, Sogebr	ush, slough	gross. Wate	ا ا	
		0 '		Coyote.	
,				/*	
			· · · · · · · · · · · · · · · · · · ·		
Stream Quality:	11: Ada 1 5	71 ou () 414			
Olivani Quanty.	High Moderate	I LOW Cattle C	legislation		
*					
				•	

# Waterbody Data Form \$106 PROOL - Stream

The CL
☐ Centerline 🕅 Re-Route 🖽 Access Road 🖾 Ancillary Facility 🖸 Transmission Line 🖂 Other
Centerline ID: 3/26/10 Project Designated Name: KXL Phase IV
Date: 6/14/10 Client/Project Name: TransCanada Trow - KXL Milepost Enter/Exit: 215.2
Team: B/06 State/County: MT-Prairie Quad Name: NA
Logbook No.: 2 Logbook Page No.: — Tract No.:  MC-MT-PR-00167
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)
Photos: 001 S,002W,003
Chotost Pasture 1 2-4' 2's rentical
Sou' Downstream
Waterbody Type: Lake Pond Borrow Pit X Stream Ag. Ditch Other
Stream Flow: Fast Moderate Slow Very Slow None
Flow Type: Perennial (Flows year round) Intermittent (Flows <3 month None
Seasonal (Continuous flow ≥ 3 months) Ephemeral (Flows only in response to rainfall)
Direction of Flow: N NE E SE SS SW W NW No Flow
OHWM Width (ft.):
Sinuosity: Braided Mandering Straight N/A
Stream Width (ft.): Water Surface (At Crossing Location)
Stream Depth (ft.): 0 0 1-3 0 3-6 0 6-12 12-18 18-24 12-36 136-48 148-60 160+ Post
OHWM Indicators: Scow, Bentyley
Bank Height (ft.): Left: 0-2 2-4 4-6 6-8 8+
(Looking Downstream) Right: 0-2 12 2-4 4-6 6-8 8+
Bank Slope: Left: ☐ 4:1 ☐ 3:1 ☐ 2:1 ☐ 1:1 🔥 Vertical
(Looking Downstream) Right: 4:1 3:1 2:1 1:1 Vertical

Qualitative Attribut	tes S/06PROOT				
Water Ap pearance:	Α.				
Clear	Turbid Sheen on Surfac Floating Algalmats				
Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum				
□ No Flow	Other: Pauls				
Stream Substrate %:	Clayloum				
Aquatic Habitats:					
Sand Bar	☐ Gravel Riffle				
Gravel Bar	<b>⊠ Dee</b> p Pools Shallo ে ্রা In-stream Submerged Plant % Cover:				
☐ Mud Bar	Bank Root Systems Fringing Wetlands Characteristics:				
Undercut Banks	☐ Overhanging Trees/Shrubs ☐ None				
Aquatic Organisms Ob	pserved: NA				
Riparian Zone:	· .				
	egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - $\mathcal{Z}_{\mathcal{O}}^{-1}$ Right - $\mathcal{Z}_{\mathcal{O}}^{-1}$				
Vegetative Layers:	Herbs Shrubs Trees Multiple				
Significant Bare Are	eas Within Riparian Zone 📋 Yes 🔯No 📋 Unknown				
Evidence Of Non-B	uffered Concentrated Flows: Yes WNo Unknown				
Tributary Condition:	Natural Artificial (Man-Made) Manipulated				
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting				
☐ Dikes/Berms ☐ Excessive Bank Erosion ☑ N/A					
Disturbances:					
	Livestock Access to Riparian Zone Manure In Stream or On Banks				
	Waste Discharge Pipes Present				
	Other:				
Habitat Characteristics	s, Aquatic, and Terrestrial Diversity Description:				
Habitat ID Number:					
	N/4				
Comments:					
Svowbory, whateras. Leafy Spurge-N106 PROOI.					
Sanstrum : Acategos dod o					
Svowory, wreaty Spurge-NIO6 PROOI.					
	<i>V V</i>				
Stream Quality:	Wish M Madaget Class				
	High Moderate C Low				
1					

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# Waterbody Data Form S106 VA009 -Rock Creek

Centerline Re-I	Route 🗓 Access Road 🖺 Ancillary I	Facility Transmission Lin	ne 🖸 Other
Centerline ID: 3/a	6/10	Dustrat Danie - Late 1 Marie	C Pipeline-PhaseIX
6/3/10			epost Enter/Exit: ~39.15
Team: B/06.	State/County: MT - Vall	ey.	Quad Name:
Logbook No.: 1 Logbo	pok Page No.: Tract No.:	NT-VA	
Drawing (Please provide o	rientation arrow, all features identified, location	to centerline, etc.) Photo:	28 001E,002N,003N
KN gastin	protos	Jo-2'	16' ment 14-8'
	B Porton	7	mapped the enter the creek was flooded we couldn't cross for e
Stream Flow:	ake Pond Borrow Pit X Stream		100
Flow Town			t rain
X.	erennial (Flows year round) leasonal (Continuous flow ≥ 3 months)	<ul><li>Intermittent (Flows &lt;3 r</li><li>Ephemeral (Flows only</li></ul>	
Direction of Flow:		SW W NW	□ No Flow
	?!		
ACCUSED AND PARTY OF THE PARTY		Straight	
Stream Width (ft.): To	16'=16 Water St	rface (At Crossing Location)	≈81
Stream Depth (ft.):  OHWM Indicators:	0 🔀 1-3 🖫 3-6 🖫 6-12 🖫 1	12-18 = 18-24 = 24-36 = ting / best peg.	
Bank Height (ft.): (Looking Downstream)	Left:          □ 0-2 □ 2-4 □ 4-6 □	] 6-8	
Bank Slope: (Looking Downstream)		[1:1 ☐ Vertical] 1:1 ☐ Vertical	

Qualitative Attribut	es .			S/06 VA 009		
Water Ap pearance:	F3 7 111					
Clear	Turbid	Sheen on Surfac	Floating Algalmats			
Slightly Turbid	Very Turbid	Greenish Color	Obvious Surface Scun	n		
No Flow	Other: Brown	- Recent rain				
Stream Substrate %:	Cobble/gr	avel, Silty o	lay			
Aquatic Habitats:	E Const Diff.		- 1 Dia 1 N O			
Sand Bar	Gravel Riffle		Emergent Plant % Cover			
Gravel Bar	Deep Pools In-stream Submerged Plant % Cover:					
Mud Bar	Bank Root System		Vetlands Characteristics:			
Undercut Banks	~	s/Shrubs 📋 None				
Aquatic Organisms Ob	served:	. Mussel She	lla			
Riparian Zone:	KLOPP STOLET					
Width of Natural Ve	getation Zone from Edg	ge of Active Channel ou	t to Flood Plain (ft): Left - /	5 Right - 15		
	Herbs Shrubs					
		e Yes No	Unknown			
Evidence Of Non-Bu	uffered Concentrated F	lows: Yes No	Unknown			
Tributary Condition:		Artificial (Man-Made)				
Channel Condition:	Channelization/Brai			ina		
	Dikes/Berms	Excessive I				
Disturbances:				.n.		
	Livestock Access to	/	anure In Stream or On Bank			
	☐ Waste Discharge Pipes Present ☐ Other:					
	Other.					
Habitat Characteristics	, Aquatic, and Terrestrial D	iversity Description:	1 10 10 10 10			
Habitat ID Number:	1/A * Leafy	Spurge @ He	banks, NIOSVADO	λ.		
		1 9				
0 +	motive cotten	rood.	1	-4111		
rasture -	sage lowsh (B	anks Jeineus);	sageword, leafly sy	surge, crested wheater		
Comments.						
KDE	is steep	while LOB.	is Shallow			
	. 1		01.0000 %			
				12 234 1355		
Stream Quality:	High Moderate	1 Low				
	The state of the s					
	Cottle	saccess.				
	High Moderate Coattle	sacess.				

\$109 VA pd2

☐ Centerline ☐ Re-Route Access Road ☐ Ancillary F	couldby E Transmission Line E Other		
0()	Budest Designated Masses   1		
5/26/10	Keysbrekt Phase IV		
Date: 8/3/10 Client/Project Name: Trans Canada	- Trou Milepost Enter/Exit: (LQ3.1 CARI23 ~ 1.25		
Team: 13109. State/County: MT- Valley	Quad Name:		
Logbook No.: 1 Logbook Page No.: Tract No.:	MT-VA-00805		
Drawing (Please provide orientation arrow, all features identified, location t	o centerline, etc.) Photosis 18, 28, 3W		
•	driff ac up		
Down Stream	grand Ad  TEDS' Thatas loc'  crop field and		
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit ☐ Stream	Ag. Ditch ⊡ Other		
Stream Flow: Fast Moderate Slow	Slow None		
Flow Type: Perennial (Flows year round)	intermittent (Flows <3 month None		
	Ephemeral (Flows only in response to rainfall) Irrigates		
Direction of Flow: N NE XE SE S	SW DW NW No Flow		
OHWM Width (ft.):			
	Straight N/A face (At Crossing Location)		
10574	~ 1		
	2-18 🗊 18-24 📋 24-36 📋 36-48 🖫 48-60 🖾 60+		
OHWM Indicators: Bendreg. Scom.			
	6-8 3 8+		
Ngir. 0-2 12 2-4 0 4-0 0	6-8  8+		
(Looking Downstream)	1:1 Vertical		
Right: 4:1 3:1 2:1	1:1		

Qualitative Attribut	tes					
Water Ap pearance:						
☐ Clear	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algaimats					
Slightly Turbid	☑ Very Turbid ☐ GreenIsh Color ☐ Obvious Surface Scum					
No Flow Other: Slow flow						
Stream Substrate %: (	Clay					
Aquatic Habitats:						
Sand Bar						
Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plant % Cover:					
☐ Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:					
Undercut Banks	☑ Overhanging Trees/Shrubs ØNone					
Aquatic Organisms Ob	served: NONE					
Riparian Zone:						
Width of Natural Ve	getation Zone from Edge of Active Channel out to Flood Plain (ft): Left - MA Right - MA					
Vegetative Layers:	Herbs Shrubs Trees Multiple					
	eas Within Riparian Zone 🖂 Yes 🗂 No 📑 Unknown					
	uffered Concentrated Fiows:  Yes No Unknown					
Tributary Condition:	☐ Naturai   Artificial (Man-Made) ☐ Manipulated					
Channel Condition:	Channelization/Braiding Unnatural Straightening Downcutting					
	☐ Dikes/Berms ☐ Excessive Bank Erosion ☑ N/A					
Disturbances:	Livestock Access to Riparian Zone Manure In Stream or On Banks					
	☐ Waste Discharge Pipes Present					
	Other: //A					
	Owen Comment of the C					
Habitat Characteristics	, Aquatic, and Terrestrial Diversity Description:					
Habitat iD Number:	NA					
	•					
Comments:						
Surrounded by grasses to the North & crops to the						
Carrow and grant and a second to the						
South.						
Stream Quality:						
Ottoani Guanty.	High Moderate Low					
	•					

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Feature ID: S109VA002

**ROCK CREEK** 

☐ Centerline	☐ Re-Route	e 🗹 Access	Road 🗌 Ancillar	/ Facility	☐ Transmissio	n Line  Other	
				oject Designated Name:			
CAR-010A	CAR-010A CAR-VA-010A						
Date:		Project Name:				Milepost Enter/Exit:	
2009/05/11	Keyst	one XL- 1062	3-007			1.35 - 1.37	
Team:		State/County:				Quad Name:	
109		MT - Valley				Jones Coulee	
Logbook No.:	Logbook Pa	ge No.:	Tract No.:				
1	1 42 AR-MT-VA-02010.000						
Sketch							
	CL OF AR-010A						
S109VA002							
Waterbody Type: Stream Flow:	Lake		orrow Pit 🔽 Strea	m _ /	Ag. Ditch 🔲 Othe	er	
	✓ Fast		☐ Slow ☐ Ve	ry Slow	☐ None		
Flow Type:	✓ Perenr	ial (Flows ye	ar round)	□ In	termittent (Flows	<3 month None	
	☐ Seasor	nal (Continuo	us flow ≥ 3 months		,	only in response to rainfall)	
Direction of Flow		NE DE	☐ SE 🗸 S			NW □ No Flow	
OHWM Width (ft.)		) 1 The   he			1 A	444 FINO LIONA	
Sinuosity:	13	4 FA	4oondoring -	Ctroint	4		
Streem Width (%):							
, 15							
Stream Depth (in.): □ 0 □ 1-3 □ 3-6 □ 6-12 ▼ 12-18 □ 18-24 □ 24-36 □ 36-48 □ 48-60 □ 60+							
OHWM Indicators:							
BENT, MATTED OR MISSING VEGETATION							
CLEAR NATURAL LINE ON BANK							
Bank Height (ft.):	Left:	□ 0-2 🗸	2-4 4-6	6-8	□ 8+		
(Looking Downstre			2-4 4-6		8+		
Barti Sta	-			6-8			
Bank Slope: (Looking Downstre	Left: Right	☐ 4:1 ☐ b: <b>☑</b> 4:1 ☐		1:1	☐ Vertical		
	rign	L <b>V</b> 4.1	3:1 2:1	] 1:1	☐ Vertical		

#### **AECOM Environment**

1601 PROSPECT PKWY

FORT COLLINS CO 80525-9992

#### **Qualitative Attributes**

Water Appearance:		4		
☐ Clear	✓ Turbid ☐ Sheen	on Surface	☐ Floating Algalmats	
☐ Slightly Turbid	☐ Very Turbid ☐ Greeni	sh Color	Obvious Surface Scum	•
☐ No Flow	☐ Other:			
Stream Substrate %:				
50% GRA\	/EL			
50% COBE	BLES			
Aquatic Habitats:		***************************************		
☐ Sand Bar	✓ Gravel Riffle	☐ In-stream En	nergent Plant % Cover: 0	
☐ Gravel Bar	☐ Deep Pools	☐ In-stream Su	bmerged Plants % Cover: 0	
☐ Mud Bar	☐ Bank Root Systems	☐ Fringing Wet	tlands Characteristics:	
☐ Undercut Banks	Overhanging Trees/Shrubs	None		
Aquatic Organisms Ob	served:			144
Riparian Zone:				
-	getation Zone from Edge of Active	Channel out to	Flood Plain (ft): Left - 0	Right - 0
Vegetative Lavers:	✓ Herbs ☐ Shrubs ✓ Trees ☐	Multiple	, ,	J
-	as Within Riparian Zone:		known	
	uffered Concentrated Flows: TYe			
Tributary Condition:		n-Made) 🔽 l		
Channel Condition:	Visited Visite	Unnatural Stra		
	Dikes/Berms	Excessive Bar		
Disturbances:	Tuesd Constitution of the		Verland I	
and the state of t	Livestock Access to Riparian Z		ure In Stream or On Banks	
	<ul><li>☐ Waste Discharge Pipes Present</li><li>☐ Other:</li></ul>			
	Other.			
Habitat Characteristics	, Aquatic, and Terrestrial Diversity Desc	ription:		
Habitat ID Number	•	•		
Comments:				
	HICLE CROSSING			
Stream Quality:	High - Moderate - Low			
	High			
		***************************************		

Threlen		
☐ Centerline	acility 🖺 Transmission	Line Other
Centerline ID: 3/26/10	Project Designated Name:	Keystonext-PhaseTT
Date: 8/27/10 Client/Project Name: TransCand	ida-Trow	Milepost Enter/Exit: F235.7
Team: B110 State/County: MT- (-allo	0	Quad Name:
Logbook No.: 1 Logbook Page No.: 40 Tract No.: ML-M	T-FA -00270	00280
Drawing (Please provide orientation arrow, all features identified, location to	centerline, etc.)	L: 0015,007 W,003N
1 SHOFAUDI		L'6 001 S ,003 W ,003 N
N .	_	
Pastur -		Po-2 35 002 1
4- Telephotos -	- 500	Downstream
Posture /	4	
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit ☒ Stream	Ag. Ditch Othe	
	Slow None	
Flow Type: Perennial (Flows year round)	Intermittent (Flows <	3 month None
Seasonal (Continuous flow ≥ 3 months)	Ephemeral (Flows or	nly in response to rainfall)
Direction of Flow: N NE E SE S	SW W N	W 🔯 No Flow
OHWM Width (ft.): ~31		
	traight N/A ace (At Crossing Location)	
100 ~10		0'
OHWM Indicators: A \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	-18 🗍 18-24 📋 24-36	36-48 48-60 60+
Bank Height (ft.): Left: \$\infty 0-2  2-4  4-6  6	6-8 🗍 8+	
(Looking Downstream)  Right:   0-2		
Bank Slope: Left: 4:1 3:1 2:1		
(Looking Downstream) Right: 4:1 3:1 2:1	-	

Qualitative Attribu	
Water Ap pearance:	
Clear	☐ Turbid ☐ Sheen on Surfac ☐ Floating Algalmats
Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum
No Flow	Other: No Hao
Stream Substrate %:	Clay/Silt
Aquatic Habitats:	
☐ Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover: 60% canex
Gravel Bar	Deep Pools In-stream Submerged Plant % Cover:
Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:
☐ Undercut Banks	Overhanging Trees/Shrubs None
Aquatic Organisms Ob	oserved: NONE
Riparian Zone:	
Width of Natural Ve	egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 10 Right -70
Vegetative Lavers:	Herbs Shrubs Trees Multiple
	eas WithIn Riparian Zone Yes No Unknown
	uffered Concentrated Flows: Yes No Unknown
Tributary Condition:	Natural Artificial (Man-Made) Manipulated
Channel Condition:	2 1 11 21
Disturbances:	
Disturbances.	Livestock Access to Riparian Zone Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
Habitat Characteristics	s, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number:	
	NA
Comments:	
Tribu	we of Survey. Callests rainwater overland flow
01	
6 40	me of survey. Callects rainwater overland flow
Snowberry,	Wheatgrass, Sagebrush.
Stream Quality:	High Moderate Low

SIIOFA 662 Pennel Greek

. 11	nalan	ponner treek	
17	nelen		
☐ Centerline A.F	Re-Route Access Road Ancillary F	Facility Transmission Line Other	
Centerline ID:	3/26/10	Project Designated Name: Kenstore X1 - Phase	V
Date: 8/27/10	Client/Project Name: Translanada	Trow Milepost Enter/Exit: ≈233.5	
Team: 8110	State/County: MT-Fallo	Quad Name: NA	
+	ogbook Page No.: 41 Tract No.: ML-A	MT-FA -00210 \$ 00220	
Drawing (Please provide	de orientation arrow, all features identified, location to	to centerline, etc.) Pictor 9 001 NW 002 N,	00
1	1501/4	dn ac up	Ó0
N	Posture /	44	
		15' WITO-2'	11
Pao	ture photos	Downstream	
Waterbody Type:	Lake 🖺 Pond 🗎 Borrow Pit 🏚 Stream	n 👩 Ag. Ditch 🗀 Other	
Ctroom Flour	Fast Moderate Slow Very	The result of th	
Flow Type:	Perennial (Flows year round)	☐ Intermittent (Flows <3 month ☐ None ☐ Ephemeral (Flows only in response to rainfall)	
Disastina of Claus	N NE DE DSE DS	SW W NW No Flow	
OHWM Width (ft.):	6		
Sinuosity:		Straight N/A	
Stream Width (ft.):		rface (At Crossing Location) /= 5/	
Stream Depth (ft.):		2-18 🗍 18-24 📄 24-36 📋 36-48 📋 48-60 📋 60+	
OHWM Indicators:			
Bank Height (ft.):			
(Looking Downstream)		The state of the s	
Bank Slope:		and the second s	
(Looking Downstream)		the state of the s	
Bank Height (ft.): (Looking Downstream) Bank Slope:	Right: 240-2 2-4 4-6 4-6 Left: 4:1 3:1 2:1	6-8	

SHOFAOOZ Pennel Creek Qualitative Attributes Water Ap pearance: Clear Turbid Sheen on Surfac A Floating Algalmats Slightly Turbid ☐ Very Turbid Greenish Color Obvious Surface Scum A Other: Cloudy to clear No Flow Stream Substrate %: Aquatic Habitats: % Cover: Carey/Juneus 30% Sand Bar Gravel Riffle In-stream Emergent Plant Gravel Bar Deep Pools In-stream Submerged Plant % Cover: Mud Bar Bank Root Systems Fringing Wetlands Characteristics: Undercut Banks Overhanging Trees/Shrubs None Aquatic Organisms Observed: Nowe Riparian Zone: Width of Natural Vegetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - /() Right - /() Vegetative Layers: ☐ Herbs ☐ Shrubs ☐ Trees ☐ Multiple Significant Bare Areas Within Riparian Zone Yes No Unknown Evidence Of Non-Buffered Concentrated Flows: Yes No Unknown Natural Artificial (Man-Made) Manipulated Small dam Win channel Tributary Condition: Channel Condition: Channelization/Braiding Unnatural Straightening ☐ Downcutting Dikes/Berms Excessive Bank Erosion □ N/A Disturbances: Livestock Access to Riparian Zone Manure In Stream or On Banks ☐ Waste Discharge Pipes Present Other: Small dam to hold waly for livestock. Habitat Characteristics, Aquatic, and Terrestrial Diversity Description: Habitat ID Number: MA

Carry/Juran/Barmyard grass/sages/spartina

Stream Quality: High A Moderate D Low Secobone

Feature ID: S112PH001

**Corral Coulee** 

☐ Centerline ☐	Re-Rout	e 🗹 Access F	Road 🔲 Ancillary F	Facility   Transmission	Line 🗌 Other
Centerline ID:				Project Designated Name:	
20090331AR				CAR-004A	
Date:	4	Project Name:			Milepost Enter/Exit:
2009/05/07	Keyst	tone XL- 10623	3-007		2.52 - 2.64
Team:		State/County:			Quad Name:
112		MT - Phillips			Dead Horse Coulee
Logbook No.:	Logbook Pa	age No.:	Tract No.: ML-MT-PH-00185	5.000	
Sketch					
			PHOTO_E PHOT	O W CAR-GOTA	
Waterbody Type:	Lake	☐ Pond ☐ Bo	orrow Pit 🕢 Stream	n 🗌 Ag. Ditch 🔲 Othe	er
Stream Flow:	☐ Fast	☐ Moderate	☐ Slow ☐ Very	Slow None	
Flow Type:	Perenr	nial (Flows yea	ar round)	☐ Intermittent (Flows <	<3 month ☐ None
	☐ Seaso	nal (Continuou	s flow ≥ 3 months)	Ephemeral (Flows o	nly in response to rainfall)
Direction of Flow:		NE ZE	□SE □S		IW □ No Flow
OHWM Width (ft.):	4				
Sinuosity:	☐ Braide	d <b>☑</b> M	leandering 🔲 S	Straight	
Stream Width (ft.):	10		Water Sur	face (At Crossing Location):	2
Stream Depth (in.)		<b>☑</b> 1-3 □ 3	l-6	2-18 🗌 18-24 🔲 24-36	□ 36-48 □ 48-60 □ 60+
OHWM Indicators:	•				
CLEAR NATU					
Bank Height (ft.):	Left:	□ 0-2	2-4 4-6	6-8 🗌 8+	
(Looking Downstrea	Righ	it: 🗌 0-2 🗹	2-4 4-6	6-8 🗌 8+	
Bank Slope:	Left:	<b>✓</b> 4:1	3:1 2:1	1:1	
(Looking Downstrea				1:1	
	- Ngn	<b>V</b> 4.1 U	U.1 [ 4.1 [	i.i U vertical	

Feature ID: S113MC001

**Shade Creek** 

✓ Centerline	☐ Re-Route ☐ Access	Road  Ancillary	Facility   Transmission	n Line   Other		
Centerline ID:			Project Designated Name:	Project Designated Name:		
2009215CL			N/A			
Date: 2009/05/07	Client/Project Name: Keystone XL- 106	22 007		Milepost Enter/Exit:		
Team:	State/County:	23-007		110.41 - 110.49 Quad Name:		
113	MT - McCo	ne		Willis Buttes		
Logbook No.:	Logbook Page No.:	Tract No.:		TT III Dates		
1	12	ML-MT-MC-0021	5.00			
Sketch						
			$\wedge$			
		photo posite	N			
		NE 110.4 1				
			<i>&gt;</i>			
		S113MC001				
			, "			
Waterbody Type:	Lake Pond	Borrow Pit 📝 Strear	n 🗌 Ag. Ditch 🦳 Othe	er		
Stream Flow:	☐ Fast ☐ Moderate	Slow □ Ver	/ Slow  None			
Fiow Type:	☐ Perennial (Flows y	· · · · · · · · · · · · · · · · · · ·	✓ Intermittent (Flows <	<3 month		
		ous flow ≥ 3 months)		nly in response to rainfall)		
Direction of Flow		✓ SE S		IW No Flow		
OHWM Width (ft.)		<u> </u>		INO Flow		
Sinuosity:	*	Moondoring	Ctraight DAI/A			
Stream Width (ft.			Straight			
Stream Depth (in	13			7		
OHWM indicators		3-6	2-18 🗌 18-24 🗌 24-36	□ 36-48 □ 48-60 □ 60+		
	TED OR MISSING VEGE	HATION	n)			
LITTER AND	DEBRIS					
SHELVING						
Bank Height (ft.):		☐ 2-4 ☐ 4-6 <b>☑</b>	6-8 🗌 8+			
(Looking Downstre	Right: 0-2	2-4 4-6	6-8 🗌 8+			
Bank Siope:	Left: 4:1 [	3:1 □ 2:1 🗸	1:1			
(Looking Downstre	Right: 4:1	3:1 2:1				
	J L					

### **AECOM Environment**

1601 PROSPECT PKWY

FORT COLLINS CO 80525-9992

#### **Qualitative Attributes**

Water Appearance:	
☐ Clear	☐ Turbid ☐ Sheen on Surface ☐ Floating Algalmats
Slightly Turbid	✓ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum
☐ No Flow	Other:
Stream Substrate %:	U Ottor.
85% SILTS	
15% COBI	BLES
Aquatic Habitats:	
☐ Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover: 0
Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plants % Cover: 0
✓ Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:
✓ Undercut Banks	
Aquatic Organisms Ob	served:
NONE	
Riparian Zone:	•
Width of Natural Ve	getation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 10 Right - 10
	✓ Herbs ✓ Shrubs ✓ Trees ✓ Multiple
•	
	- Limit Limit
	uffered Concentrated Flows: ☐ Yes ☑ No ☐ Unknown
Tributary Condition:	✓ Natural ☐ Artificial (Man-Made) ☐ Manipulated
Channel Condition:	☐ Channelization/Braiding ☐ Unnatural Straightening ☑ Downcutting
	□ Dikes/Berms
Disturbances:	✓ Livestock Access to Riparian Zone ☐ Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
	U Other.
Habitat Characteristics	s, Aquatic, and Terrestriai Diversity Description:
Habitat ID Number	
	m w/ deep cut banks w/ moderate undercutting and bank errosion. no aquitic life observed. Riparian
	ludes native vegetation in addition to scattered stunted Populus deltoides
	to countries to a cou
Comments:	
Stream Quality:	Lligh  Moderate  Lev
	High   ✓ Moderate   Low

Feature ID: S113MC002 Tributary of Shade Creek

✓ Centerline	☐ Re-Route ☐ Acces	s Road 🔲 Ancillary	Facility   Transmis	ssion Line 🔲 Other	
Centerline ID:			Project Designated Name:		
2009215CL			N/A		
Date: Client/Project Name:				Milepost Enter/Exit:	
2009/05/07	Keystone XL- 10			111.4 - 111.42	
Team:	State/County			Quad Name:	
113	MT - McCo	Tract No.:		Willis Buttes	
Logbook No.:	Logbook Page No.:	ML-MT-MC-002	25 000		
		1012 1011 1010 002	20.000		
Sketch					
		MD-1114	photo paints  CL		
Waterbody Type: Stream Flow: Flow Type:	Fast Moderate	te 🗌 Slow 📋 Ve	ry Slow 📝 None	Other	
	☐ Perennial (Flows	•	☐ Intermittent (Flow		
Direction of Flow		ious flow ≥ 3 months  SE □ S		ws only in response to rainfall)	
OHWM Width (ft.		SE S	□ SW □ W	NW No Flow	
Sinuosity:	2.0	Meandering	Straight N		
Stream Width (ft.			urface (At Crossing Locat	1\	
				· •	
Stream Depth (in		3-6 6-12	12-18 🗌 18-24 🔲 24	1-36 🗌 36-48 🗌 48-60 🔲 60+	
LITTER AND	TED OR MISSING VEG	ETATION			
Bank Height (ft.):		☐ 2-4 ☐ 4-6 ☐	6-8 8+		
(Looking Downstre	Right: 🗹 0-2	☐ 2-4 ☐ 4-6 ☐	] 6-8 🔲 8+		
Bank Slope:	Left: 4:1	□ 3:1 🗹 2:1 🗆	] 1:1		
(Looking Downstre	eam) Right: 4:1		1:1		
	٠٠٠٠ ســا ٢٠٠٠ ي		, <u></u>		

#### **AECOM Environment**

1601 PROSPECT PKWY

FORT COLLINS CO 80525-9992

#### **Qualitative Attributes**

Water Appearance:			
☐ Clear	☐ Turbid ☐ Sheen on Surface ☐ Floating Algalmats		
☐ Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum		
✓ No Flow	☐ Other:		
Stream Substrate %:			
100% SILTS			
Aquatic Habitats:			
☐ Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover: 0		
☐ Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plants % Cover: 0		
☐ Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:		
☐ Undercut Banks	☐ Overhanging Trees/Shrubs ✓ None		
Aquatic Organisms Ob	served:		
NONE			
Riparian Zone:			
	getation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 10 Right - 10		
	✓ Herbs ✓ Shrubs ☐ Trees ☐ Multiple		
	as Within Riparian Zone:   ✓ Yes □ No □ Unknown		
_	uffered Concentrated Flows: ✓ Yes ☐ No ☐ Unknown		
Tributary Condition:	✓ Natural ☐ Artificial (Man-Made) ☐ Manipulated		
Channel Condition:	✓ Channelization/Braiding □ Unnatural Straightening □ Downcutting		
	Dikes/Berms		
Disturbances:	✓ Livestock Access to Riparian Zone ☐ Manure In Stream or On Banks		
	Waste Discharge Pipes Present		
	Other:		
	, Aquatic, and Terrestrial Diversity Description:		
Habitat ID Number			
	sims obsefved. terrestrial vegetation is spare (including glassland species. no flow evidence bed		
and bank and high	n water mark		
Comments:			
<u> </u>			
Stream Quality:	High ☐ Moderate ☑ Low		

Feature ID: S113MC003 Tributary of Shade Creek

✓ Centerline	☐ Re-Route ☐ Access	Road	Facility Transmission	n Line ☐ Other		
Centerline ID:			Project Designated Name:			
2009215CL			N/A			
Date:	Client/Project Name:	20.00		Milepost Enter/Exit:		
2009/05/07	Keystone XL- 1062	23-007		111.42 - 111.43		
Team: 113	State/County: MT - McCor			Quad Name:		
Logbook No.:	Logbook Page No.:	Tract No.:		Willis Buttes		
1	18	ML-MT-MC-002	25.000			
Sketch						
		S113MC003	MP-111.4  Photo points	N CL		
Waterbody Type: Stream Flow:	Lake Pond E	Borrow Pit <b>☑</b> Stream	m	er		
Flow Type:	Perennial (Flows ye	ear round)	☐ Intermittent (Flows <	3 month   ✓ None		
	☐ Seasonal (Continuo	•	•	nly in response to rainfall)		
Direction of Fiow	" N NE DE	□ SE □ S		W No Flow		
OHWM Width (ft.)	): 25			INO Flow		
Sinuosity:		Meandering	Straight - N/A			
Stream Width (ft.)	· ·	• -	Straight N/A N/A			
Stream Depth (in.	\.			0		
OHWM Indicators	<b>₩</b> 0	3-6	2-18 🗌 18-24 🗌 24-36	□ 36-48 □ 48-60 □ 60+		
BENT, MATT	TED OR MISSING VEGE	TATION				
Bank Height (ft.):	Left: <b>☑</b> 0-2	2-4	6-8			
(Looking Downstre			6-8			
Bank Slope:	Left: 4:1					
(Looking Downstre	am)					
	Right: 4:1	] 3:1	1:1			

#### **AECOM Environment**

1601 PROSPECT PKWY

FORT COLLINS CO 80525-9992

#### **Qualitative Attributes**

Water Appearance:			
☐ Clear	☐ Turbid ☐ Sheen on Surface ☐ Floating Algalmats		
☐ Slightly Turbid	☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum		
✓ No Flow	☐ Other:		
Stream Substrate %:			
100% SILTS			
Aquatic Habitats:			
☐ Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover: 0		
☐ Gravel Bar	☐ Deep Pools ☐ In-stream Submerged Plants % Cover: 0		
☐ Mud Bar	☐ Bank Root Systems ☐ Fringing Wetlands Characteristics:		
☐ Undercut Banks	☐ Overhanging Trees/Shrubs ☑ None		
Aquatic Organisms Ob	served:		
NONE			
Dinanian Zana			
Riparian Zone:	getetion Zone from Edge of Active Channel out to Flood Blain (ft): Left 10 Bight 10		
	getation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 10 Right - 10		
1	✓ Herbs ✓ Shrubs ☐ Trees ☐ Multiple		
_	as Within Riparian Zone:   ✓ Yes □ No □ Unknown		
	uffered Concentrated Flows:   ✓ Yes   ✓ No   ✓ Unknown		
Tributary Condition:	✓ Natural  ☐ Artificial (Man-Made)  ☐ Manipulated		
Channel Condition:	☑ Channelization/Braiding ☐ Unnatural Straightening ☐ Downcutting		
	☐ Dikes/Berms ☐ Excessive Bank Erosion ☐ N/A		
Disturbances:	✓ Livestock Access to Riparian Zone ☐ Manure In Stream or On Banks		
	☐ Waste Discharge Pipes Present		
	☐ Other:		
	, Aquatic, and Terrestrial Diversity Description:		
Habitat ID Number			
no aquatic organis	sims observed. terrestrial vegetation is spare (including glassland species. no flow evidence bed		
and bank and mgi	i water mark		
Comments:	into tract ML-MT-MC-00230.000		
Stream also nows	INIO tract IVIL-IVI I -IVIC-00230.000		
Stream Quality:	High ☐ Moderate ☑ Low		

Feature ID: S113MC004 South Fork Shade Creek

✓ Centerline	☐ Re-Route ☐ Access	Road  Ancillary	acility 🔲 Transmission	Line Other
Centerline ID:			Project Designated Name:	
2009215CL			N/A	
Date:	Client/Project Name:	22 007		Milepost Enter/Exit:
2009/05/11	Keystone XL- 106	23-007		114.23 - 114.24
Team: 113	State/County: MT - McCo	20		Quad Name: Shade Creek
Logbook No.:	Logbook Page No.:	Tract No.:		Shade Creek
1	44	ML MT MC 0025	0.000	
Sketch				
	CL MF	S113MC004	N	
Waterbody Type:	☐ Lake ☐ Pond ☐	Borrow Pit 📝 Strear	n	r
Stream Flow:	☐ Fast ☐ Moderate	e 🗌 Slow 📝 Ver	/ Slow 🔲 None	
Flow Type:	☐ Perennial (Flows y	ear round) ous flow ≥ 3 months)	✓ Intermittent (Flows <	3 month
Direction of Flow:		SE S		W No Flow
OHWM Width (ft.)				
Sinuosity:	☐ Braided 🗸	Meandering	Straight	
Stream Width (ft.)	<sup>:</sup> 10	Water Su	face (At Crossing Location):	2
Stream Depth (in.)	):	3-6 🗌 6-12 🔲 1	2-18 🗌 18-24 🔲 24-36	□ 36-48 □ 48-60 □ 60+
OHWM Indicators	è •			
BENT, MATT	ED OR MISSING VEGI	ETATION		
Bank Height (ft.):	Left: 0-2	<b>√</b> 2-4	6-8 🗌 8+	
(Looking Downstre	am) Right: 0-2	<b>√</b> 2-4	6-8 🗌 8+	
Bank Siope:		<b>✓</b> 3:1 □ 2:1 □	1:1	
(Looking Downstre	am\		1:1	

#### **AECOM Environment**

1601 PROSPECT PKWY

FORT COLLINS CO 80525-9992

#### **Qualitative Attributes**

Water Appearance:	
☐ Clear	☐ Turbid ☐ Sheen on Surface ☐ Floating Algalmats
Slightly Turbid	✓ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum
☐ No Flow	☐ Other:
Stream Substrate %:	
100% SILTS	
Aquatic Habitats:	
☐ Sand Bar	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover: 0
☐ Gravel Bar	✓ Deep Pools
☐ Mud Bar	
✓ Undercut Banks	✓ Overhanging Trees/Shrubs ☐ None
Aquatic Organisms Obs	served:
NONE	
Riparian Zone:	getation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 10 Right - 10
	✓ Herbs ✓ Shrubs ☐ Trees ☐ Multiple
	as Within Riparian Zone: ☐ Yes ☑ No ☐ Unknown
	uffered Concentrated Flows: ☐ Yes ☑ No ☐ Unknown
Tributary Condition:	✓ Natural ☐ Artificial (Man-Made) ☐ Manipulated
Channel Condition:	
	☐ Dikes/Berms
Disturbances:	☑ Livestock Access to Riparian Zone ☐ Manure In Stream or On Banks
	☐ Waste Discharge Pipes Present
	Other:
F	
Habitat Characteristics, Habitat ID Number	Aquatic, and Terrestrial Diversity Description:
	and the second of header and year little flavored was a second due to executive and the set
meandering stream	m with eroded banks and very little flow volume. very turbid due to excessive sediment
C.	
Comments:	ts of native grassland species
Tipain zone consis	ts of flative grassiand species
Stream Quality:	High ✓ Moderate □ Low

Feature ID: S121DA001

**HAY CK** 

☐ Centerline ☑	Re-Rout	e 🗌 Access R	oad 🗌 Ancillary Fa	acility 🔲 Transmission L	ine 🗌 Other
Centerline ID:				Project Designated Name:	
20091019	·····		· · · · · · · · · · · · · · · · · · ·		
Date:	1	Project Name:			Milepost Enter/Exit:
2009/09/01	1062	3-016			0 - 0
Team:		State/County:			Quad Name:
121	[ 1 a a fa a a la D	MT - Dawson	Total No.		Olson Coulee South
Logbook No.:	Logbook Pa 25	ige No.:	Tract No.: ML-MT-DA-00065	000	
	20		WIL-WIT-DA-00003	.000	
Sketch					
			S121DA00	1	
Waterbody Type:	Lake		rrow Pit 🗹 Stream		r
Stream Flow:			☐ Slow ☐ Very		
Flow Type:	Pereni	nial (Flows yea	r round)	☐ Intermittent (Flows <	3 month    ✓ None
	☐ Seaso	nal (Continuous	s flow ≥ 3 months)	Ephemeral (Flows or	nly in response to rainfall)
Direction of Flow:	$\square$ N	NE E	□ SE 🗸 S	SW W N	W No Flow
OHWM Width (ft.):	1				
Sinuosity:	☐ Braide	d <b>☑</b> M	eandering 🔲 S	traight	
Stream Width (ft.):	6		Water Surf	ace (At Crossing Location):	0
Stream Depth (in.):	<b>₩</b> 0	1-3 3-	-6 🗌 6-12 🗌 12	-18 🗌 18-24 🗌 24-36	□ 36-48 □ 48-60 □ 60+
OHWM Indicators: CLEAR NATU	RAL LINE	ON BANK			
Bank Height (ft.):	Left:	□ 0-2 🗹	2-4	i-8	
(Looking Downstream				6-8	
Bank Slope:	Left:			:1	
(Looking Downstream	m) Righ		3:1		

#### **AECOM Environment**

1601 PROSPECT PKWY

**FORT COLLINS CO 80525-9992** 

Qualitative Attributes	
☐ Slightly Turbid	<ul> <li>☐ Turbid</li> <li>☐ Sheen on Surface</li> <li>☐ Floating Algalmats</li> <li>☐ Obvious Surface Scum</li> <li>☐ Other:</li> </ul>
Stream Substrate %:	
100% VEGET	ATION
l .	☐ Gravel Riffle ☐ In-stream Emergent Plant % Cover: 0 ☐ Deep Pools ☐ In-stream Submerged Plants % Cover: 0 ☐ Bank Root Systems ☐ Fringing Wetlands Characteristics: ☐ Overhanging Trees/Shrubs ☑ None
Vegetative Layers: Significant Bare Areas	etation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 200 Right - 100  Herbs Shrubs Trees Multiple s Within Riparian Zone: Yes No Unknown  fered Concentrated Flows: Yes No Unknown
Tributary Condition:	✓ Natural ☐ Artificial (Man-Made) ☐ Manipulated
Channel Condition:	☐ Channelization/Braiding       ☐ Unnatural Straightening       ☐ Downcutting         ☐ Dikes/Berms       ☐ Excessive Bank Erosion       ☑ N/A
Disturbances:	Livestock Access to Riparian Zone
Habitat Characteristics, A Habitat ID Number:	equatic, and Terrestrial Diversity Description:
Comments: ROAD GOES THRO	DUGH IT
Stream Quality:  H	igh ☑ Moderate □ Low

Feature ID: S126VA001

**Brush Fork** 

☐ Centerline ☐	Re-Route ✓ Access Ro	oad
Centerline ID:		Project Designated Name:
B-4-	011 1/0 11 11	CAR 15A
Date: 2009/09/10	Client/Project Name: 10623-016	Milepost Enter/Exit: 0 - 0
Team:	State/County:	Quad Name:
126	MT - Valley	Tampico NE
	Logbook Page No.:	Tract No.:
1 7	7	ML-MT-VA-00321.000
Sketch		
	1	Brush-Fork  GAR 15A  Sagebrush
Waterbody Type:  Stream Flow:  Flow Type:	☐ Lake ☐ Pond ☐ Bo☐ Fast ☐ Moderate☐ Perennial (Flows yea	rrow Pit ☑ Stream ☐ Ag. Ditch ☐ Other ☐ Slow ☐ Very Slow ☑ None r round) ☐ Intermittent (Flows <3 month ☑ None
[	Seasonal (Continuous	
Direction of Flow:	N NE E	SE S SW W NW No Flow
OHWM Width (ft.):		
A1 11		eandering Straight N/A
	120	Water Surface (At Crossing Location): 0
Stream Depth (in.):	<b>☑</b> 0 ☐ 1-3 ☐ 3-	6 6-12 12-18 18-24 24-36 36-48 48-60 60+
	T COMMUNITY CHANG AL LINE ON BANK POSITION	GE
Bank Height (ft.):	Left: 0-2	2-4 □ 4-6 ☑ 6-8 □ 8+
(Looking Downstream)	· · · · · · · · · · · · · · · · · · ·	2-4 □ 4-6 ☑ 6-8 □ 8+
Bank Slope:		3:1
( Downstream)		

#### **AECOM Environment**

1601 PROSPECT PKWY

FORT COLLINS CO 80525-9992

Qualitative Attributes
V Appearance:
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐
☐ Slightly Turbid ☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum ☐ Very Turbid ☐ Greenish Color ☐ Obvious Surface Scum ☐ Other:
Stream Substrate %:
50% VEGETATION
20% COBBLES
30% CLAY
Aquatic Habitats:
Sand Bar Gravel Riffle In-stream Emergent Plant % Cover: 40
☑ Gravel Bar ☐ Deep Pools ☐ In-stream Submerged Plants % Cover: 0
☐ Mud Bar ☑ Bank Root Systems ☐ Fringing Wetlands Characteristics:
☐ Undercut Banks ☐ Overhanging Trees/Shrubs ☐ None
Aquatic Organisms Observed: NONE
Riparian Zone:  Width of Natural Vegetation Zone from Edge of Active Channel out to Flood Plain (ft): Left -60 Right - 60  Vegetative Layers: Herbs Shrubs Trees Multiple  Significant Bare Areas Within Riparian Zone: Yes No Unknown  Evidence Of Non-Buffered Concentrated Flows: Yes No Unknown
Tributary Condition: ✓ Natural ☐ Artificial (Man-Made) ☐ Manipulated
Channel Condition: Channelization/Braiding Unnatural Straightening Downcutting
☐ Dikes/Berms ☐ Excessive Bank Erosion ☐ N/A
Disturbances:  ☐ Livestock Access to Riparian Zone ☐ Manure In Stream or On Banks ☐ Waste Discharge Pipes Present ☑ Other: Road built through stream bed
Habitat Characteristics, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number:
Sharptail and deer habitat
Commonto
Comments: Highly disturbed at road crossing
Stream Quality:  High  Moderate  Low

Feature ID: S126VA002 LIME CREEK

✓ Centerline	Re-Route	e 🗌 Access R	oad 🗌 Ancilla	ary Facility	☐ Transmission I	Line  Other
Centerline ID:				Proje	ct Designated Name:	
20091019						
Date:		Project Name:				Milepost Enter/Exit:
2009/09/14	1062	3-016				45.088 - 45.134
Team:		State/County:				Quad Name:
126		MT - Valley	<del></del>			Miller Springs
Logbook No.:	Logbook Pa	ige No.:	Tract No.:	0050 000		
1	20		ML-MT-VA-0	0250.000		
Sketch				ne West William		
			AN.	S	126VA002	
Waterbody Type:	☐ Lake [		rrow Pit 🗹 S			er
Stream Flow:	☐ Fast [	Moderate	Slow	Very Slow	✓ None	
Flow Type:	☐ Perenr	nial (Flows yea	r round)	Ir	termittent (Flows <	3 month
	□ Season	nal (Continuous	s flow ≥ 3 mor	nths) 🔲 E	phemeral (Flows o	nly in response to rainfall)
Direction of Flow:	_ N _	NE E	SE [	]S []S	A U W U W	IW ☑ No Flow
OHWM Width (ft.):	6					
Sinuosity:	☐ Braide	d 🛂 M	eandering	Straigh	t N/A	
Stream Width (ft.):	25		Wate	er Surface (A	t Crossing Location):	0
Stream Depth (in.):	<b>✓</b> 0	☐ 1-3 ☐ 3-	-6 🗌 6-12	<u> 12-18</u> [	18-24 24-36	□ 36-48 □ 48-60 □ 60+
OHWM Indicators: CLEAR NATU SCOUR	RAL LINE	ON BANK				
Bank Height (ft.):	Left:	□ 0-2 □	2-4 🗌 4-6	<b>✓</b> 6-8	8+	
(Looking Downstrear			2-4	✓ 6-8	□ 8+	
Bank Slope:	Left:		3:1	<u> </u>	☐ Vertical	
(Looking Downstrear	n) Righ		3:1	1:1	☐ Vertical	

#### **AECOM Environment**

1601 PROSPECT PKWY

FORT COLLINS CO 80525-9992

Qualitative Attributes
V       Appearance:         □ Jear       □ Turbid       □ Sheen on Surface       □ Floating Algalmats         □ Slightly Turbid       □ Very Turbid       □ Greenish Color       □ Obvious Surface Scum         ☑ No Flow       □ Other:         Stream Substrate %:         50% CLAY
50% VEGETATION
Aquatic Habitats:  Sand Bar Gravel Riffle In-stream Emergent Plant % Cover: 0 Gravel Bar Deep Pools In-stream Submerged Plants % Cover: 0 Mud Bar Bank Root Systems Fringing Wetlands Characteristics: Undercut Banks Overhanging Trees/Shrubs ✓ None  Aquatic Organisms Observed:  NONE
Riparlan Zone:  Width of Natural Vegetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 40  Vegetative Layers:  Herbs  Shrubs  Trees  Multiple  Significant Bare Areas Within Riparian Zone:  Yes  No  Unknown  Evidence Of Non-Buffered Concentrated Flows: Yes  No  Unknown
Tributary Condition:   Natural  Artificial (Man-Made)  Manipulated
Channel Condition: ☐ Channelization/Braiding ☐ Unnatural Straightening ☐ Dikes/Berms ☐ Excessive Bank Erosion ☐ N/A
D ances:
Habitat Characteristics, Aquatic, and Terrestrial Diversity Description: Habitat ID Number:
Comments:
Stream Quality: ☐ High ☑ Moderate ☐ Low .

REBURGER REVER

5076MC001

Centerline X Re-Route Access Road Ancillary Facility Transmission Line Other
Centerline ID:  Project Designated Name:
18/11 Kaysteine XL Phase TV Milepost Enter/Exit:
276 Quad Name:
Logbook No.: Logbook Page, No.: TrackNo.: 44 F512-miT-MC-10010,000
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)
( )
Le Corriber beanday
Covider
Boundary ()
1501- 1501 5016 mc 601
Waterbody Type: Lake Pond Borrow Pit YStream Ag. Ditch Other
Stream Flow: Fast Moderate Slow Very Slow None
Flow Type: Perennial (Flows year round) Ellatomitteet (Flows in
Direction of Flow: Fig. N. F. N. F. C. F. C. F. O. F. C. F. O. F. C. F.
OHWM Width (ft.):
Sinuosity: Braided Meandering Straight NA
Stream Width (ft.):  / / / / Water Surface (At Creesis - Land)
Stream Dentic Iff 1:
OHWM Indicators: 1-3 3-5 5 5-12 12-18 118-24 24-36 36-48 48-60 60+
Veritation in
Bank Height (it.): Left: X 0-2 2-4 2-4 6 6-8 8+ (Looking Downstream)
Right: 0-2 X 2-4 4-6 6-8 8+
Bank Sicpe: Left: X 4:1 3:1 2:1 1:1 Vertical
Right: 3:1 2:1 Townsteam Right: 4:1 3:1 Townsteam

Qualitatéve Att				· · ·
Water Appearange Clear	<u></u>		<u> </u>	
Slightly Turt	Turbid St	heen on Surfac	Floating Algalmats	
No Flow	Grand	reenish Color	Obvious Surface So	cum
Stream Substrate	Other:			
Aquatic Habitats:	UNIK SA SEELA			
Sand Bar	Grave! Riffle			
☐ Grave! Bar	Deep Pools	In-stream E	mergent Plant % Cov	ver: 45%
Mud Bar	Bank Roof Systems	E m-sueam s	Submerged Plant % Cov	/er:
☐ Undercut Bar	iks Overhanging Trees/Shrub	E Finging W	etlands Characteristics:	
Aquatic Organis ms	~			
	Ubserved: Non1	<del></del>		
Riparian Zone: Width of Notices				
AAIONI OL MANDEN	Vegetation Zone from Edge of Act	tive Channel out t	o Flood Plain (ft): Left -	10' Right - (0'
A eferonas rahel	s: Mineros Shrubs Titrees	Multiple		
organicatif pake V	treas Within Ringrian Zone 🖼 v	on Markin make	iknown	
	Tunered Concentrated Flows:	Yes No	Unknown	
	Natural Fin Artificial			
Channel Condition:		Unnatural Stra		<u> </u>
······································		Excessive Bar	}	ung
listurbances:	Livestock Access to Ripariar			
	Waste Discharge Pipes Pres		ure in Stream or On Bani	ks
<del></del>				
			DELVE d at Y'N	Le UF Silvius
labitat ID Number	s, Aquatic, and Terrestrial Diversity De	scription:		
CONCRETE PROPERTY	•			
·		•		
omments:				
	· · · · · · · · · · · · · · · · · · ·			
	· · · · · · · · · · · · · · · · · · ·			
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<del></del>	· · · · · · · · · · · · · · · · · · ·			
eam Quality:				
	High Moderate Low			

Centerline Re-Route Access Road Ancillary Facility Transmission Line Other
Centerline ID:  Project Designated Name: 5304FA 00 (
Date: 1/30/12 Client/Project Name: Keystone XL Dipeline Milepost Enter/Exit: 265.31
Team: 304 State/County: Tallon Quad Name:
Logbook No.: Logbook Page No.: Tract No.: ML-MT-FA-00690,000
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)
Row boundary  Row boundary
Waterbody Type: Lake Pond Borrow Pit Stream Ag. Ditch Other
Waterbody Type: Lake Pond Borrow Pit Stream Ag. Ditch Other  Stream Flow: Fast Moderate Slow Very Slow None
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit  Stream ☐ Ag. Ditch ☐ Other  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☑ Very Slow ☐ None  Flow Type: ☑ Perennial (Flows year round) ☐ Intermittent (Flows <3 month ☐ None ☐ Seasonal (Continuous flow ≥ 3 months) ☐ Ephemeral (Flows only in response to rainfall)
Waterbody Type: Lake Pond Borrow Pit Stream Ag. Ditch Other  Stream Flow: Fast Moderate Slow Very Slow None  Flow Type: Perennial (Flows year round) Intermittent (Flows <3 month None
Waterbody Type: ☐ Lake ☐ Pond ☐ Borrow Pit ☑ Stream ☐ Ag. Ditch ☐ Other  Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☑ Very Slow ☐ None  Flow Type: ☑ Perennial (Flows year round) ☐ Intermittent (Flows <3 month ☐ None ☐ Seasonal (Continuous flow ≥ 3 months) ☐ Ephemeral (Flows only in response to rainfall)
Waterbody Type:
Waterbody Type: □ Lake □ Pond □ Borrow Pit ☑ Stream □ Ag. Ditch □ Other  Stream Flow: □ Fast □ Moderate □ Slow ☑ Very Slow □ None  Flow Type: ☑ Perennial (Flows year round) □ Intermittent (Flows <3 month □ None □ Seasonal (Continuous flow ≥ 3 months) □ Ephemeral (Flows only in response to rainfall)  Direction of Flow: □ N ☑ NE □ E □ SE □ S □ SW □ W □ NW □ No Flow  OHWM Width (ft.): □ Stream Width (ft.): □ Water Surface (At Crossing Location)
Waterbody Type: □ Lake □ Pond □ Borrow Pit ☑ Stream □ Ag. Ditch □ Other  Stream Flow: □ Fast □ Moderate □ Slow ☑ Very Slow □ None  Flow Type: ☑ Perennial (Flows year round) □ Intermittent (Flows <3 month □ None □ Seasonal (Continuous flow ≥ 3 months) □ Ephemeral (Flows only in response to rainfall)  Direction of Flow: □ N ☑ NE □ E □ SE □ S □ SW □ W □ NW □ No Flow  OHWM Width (ft.): □ O
Waterbody Type: □ Lake □ Pond □ Borrow Pit ☑ Stream □ Ag. Ditch □ Other  Stream Flow: □ Fast □ Moderate □ Slow ☑ Very Slow □ None  Flow Type: ☑ Perennial (Flows year round) □ Intermittent (Flows <3 month □ None □ Seasonal (Continuous flow ≥ 3 months) □ Ephemeral (Flows only in response to rainfall)  Direction of Flow: □ N ☑ NE □ E □ SE □ S □ SW □ W □ NW □ No Flow  OHWM Width (ft.): □ O ☑ Mandering □ Straight □ N/A  Stream Width (ft.): □ O ☑ 1-3 □ 3-6 □ 6-12 □ 12-18 □ 18-24 □ 24-36 □ 36-48 □ 48-60 □ 60+
Waterbody Type:
Waterbody Type: □ Lake □ Pond □ Borrow Pit ▼ Stream □ Ag. Ditch □ Other  Stream Flow: □ Fast □ Moderate □ Slow ▼ Very Slow □ None  Flow Type: ▼ Perennial (Flows year round) □ Intermittent (Flows <3 month □ None □ Seasonal (Continuous flow ≥ 3 months) □ Ephemeral (Flows only in response to rainfall)  Direction of Flow: □ N ▼ NE □ E □ SE □ S □ SW □ W □ NW □ No Flow  OHWM Width (ft.):  Sinuosity: □ Braided ▼ Meandering □ Straight □ N/A  Stream Width (ft.): □ 0 ▼ 1-3 □ 3-6 □ 6-12 □ 12-18 □ 18-24 □ 24-36 □ 36-48 □ 48-60 □ 60+  OHWM Indicators: □ Vegetaflow □ Ne  Bank Height (ft.): □ 0-2 □ 2-4 □ 4-6 □ 6-8 □ 8+  Right: □ 0-2 □ 2-4 ▼ 4-6 □ 6-8 □ 8+
Waterbody Type:

Qualitative Attributes		
Water Ap pearance:		
☐ Clear		Floating Algalmats
Slightly Turbid	Very Turbid Greenish Color C	Obvious Surface Scum
□ No Flow	Other:	
Stream Substrate %:		
Aquatic Habitats:		
Sand Bar	Gravel Riffle In-stream Emerg	ent Plant % Cover:
Gravel Bar	Deep Pools In-stream Subme	erged Plant % Cover:
Mud Bar	Bank Root Systems Fringing Wetland	Is Characteristics:
	Overhanging Trees/Shrubs None	
Aquatic Organisms Observe	ed: Fish (carp)	
Riparian Zone:	(,, ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Width of Natural Vegeta	ation Zone from Edge of Active Channel out to Flo	od Plain (ft): Left - 4' Right - 4'
	Herbs Shrubs Trees Multiple	out fair (it). Lone Trigin (
	Within Riparian Zone Yes No Unknow	
	red Concentrated Flows: Yes No Unkr	Jowú
Tributary Condition:	Natural Artificial (Man-Made) Mani	pulated
Channel Condition:	Channelization/Braiding Unnatural Straight	ening Downcutting
	Dikes/Berms	
Disk to the second of the seco	Livestock Access to Riparian Zone Manure I	
		in Stream of On Banks
	Waste Discharge Pipes Present	
	Other:	
Habitat Characteristics, Aqu	uatic, and Terrestrial Diversity Description:	
Habitat ID Number:		
的是 74% 的 類別		
Comments:		
Comments.		
Stream Quality: High	h Moderate 🗆 Low	
7.76	70	

5304MC001

Centerline ID:		ccess Road		Project Designated Nar	sion Line Other	
Date: 8/8/12	Client/Project N	vame:	V D	200(-40	Milepost Enter/Exi	1
eam: ZAA	State/C	neighbor /	THE RESERVE TO SERVE THE PARTY OF THE PARTY		Quad Name:	
2020 ·		m//	mc Cone	)	Quad Ivanie.	
ogbook No.: Log	book Page No.:	7.5   fract	No.: ML-	MT-MC-0	0190,000	
rawing (Please provide	orientation arrow	w, all features ide	ALCOHOLD DESCRIPTION OF THE PERSON OF THE PE			
		(	(		boundary	22
		(	É	1		
Row	bound	art — 7	1			
Vaterbody Type:	Lake T Pon	nd 🖪 Borrow f	The second secon		Other	
/aterbody Type: tream Flow:	Lake 🔁 Pon Fast 🖫 Mo	nd 🖪 Borrow f	w 🔲 Ven	y Slow None		
Vaterbody Type: tream Flow:	Lake Pon Fast Mo	nd Borrow forderate Slo	ow Ven	y Slow None	ws <3 month	None
/aterbody Type: tream Flow:	Lake Pon Fast Mo Perennial (Fl Seasonal (Co	nd Borrow for Boderate Slows year roun	ow Ven nd) ≥ 3 months)	Slow None Intermittent (Flow	ws <3 month vs only in response t	☐ None o rainfall)
Vaterbody Type:  tream Flow:  low Type:  irection of Flow:  HWM Width (ft.):	Lake Pon Fast Mo Perennial (Fl Seasonal (Co	and Borrow for Borrow	ow ⊠ Ven nd) ≥ 3 months)	y Slow None ☐ Intermittent (Flow ☐ Ephemeral (Flow	ws <3 month	☐ None o rainfall)
raterbody Type: tream Flow: ow Type: irection of Flow: HWM Width (ft.):	Lake Pon Fast Mo Perennial (FI Seasonal (Co	and Borrow for Borrow	ow Ven nd) ≥ 3 months) SE S	Slow None Intermittent (Flow	ws <3 month ws only in response to NW No Flow	☐ None o rainfall)
Jaterbody Type: tream Flow: low Type: irection of Flow: HWM Width (ft.): inuosity: tream Width (ft.):	Lake Pon Fast Mo Perennial (Fl Seasonal (Co	nd Borrow for Borrow for Borrow for Borrow flows year round flow B B B B B B B B B B B B B B B B B B B	ow Ven nd) ≥ 3 months) SE S ering	Slow None Intermittent (Flow Ephemeral (Flow	ws <3 month ws only in response to NW No Flow	☐ None o rainfall)
/aterbody Type: tream Flow: low Type: irection of Flow: HWM Width (ft.): inuosity: tream Width (ft.):	Lake Pon Fast Mo Perennial (Fl Seasonal (Co N NE Braided	nd Borrow Foderate Slolows year roun ontinuous flow  B B S Meande	ow Ven nd) ≥ 3 months) SE S ering Water Su	Straight None	ws <3 month ws only in response to NW No Flow (A	☐ None o rainfall)
Vaterbody Type:  tream Flow:  low Type:  irection of Flow:  HWM Width (ft.):  inuosity:  tream Width (ft.):	Lake Pon Fast Mo Perennial (Fl Seasonal (Co N NE Braided N 1- Nove	and Borrow For Boderate Slows year roun continuous flow Be Solution States Stat	ow Ven nd) ≥ 3 months) SE S ering Water Su	Straight  Slow None  Intermittent (Flow  Ephemeral (Flow  W W W W  Straight  N  Fface (At Crossing Location	ws <3 month ws only in response to NW No Flow (A	None o rainfall)
Vaterbody Type:  tream Flow: low Type: irection of Flow: inuosity: tream Width (ft.): tream Depth (ft.): HWM Indicators: ank Height (ft.):	Lake Pon Fast Mo Perennial (FI Seasonal (Co N NE Braided  17 A 10 Left:	and Borrow Forderate Slows year round Shows year round ontinuous flow Meander Shows American Sho	ow Vennd) ≥ 3 months) SE S  ering S Water Su  6-12 1	Straight Note Note Note Note Note Note Note Not	ws <3 month ws only in response to NW No Flow (A	None o rainfall)
Vaterbody Type:  Itream Flow:  Illow Type:  Invertion of Flow:  Inuosity:  Itream Width (ft.):  Itream Width (ft.):	Lake Pon Fast Mo Perennial (FI Seasonal (Co N NE Braided  17 A 10 Left:	Meande  O-2 2-4  O-2 2-4	ow	Straight  Caree (At Crossing Location 2-18 18-24 12-24	ws <3 month ws only in response to NW No Flow (A	None o rainfall)

5304mc601-0015 5304mc001-002W 5304mc001-003 E 5304mc001-004N

Qualitative Attribute	Б			
Water Ap pearance:	DT			
Clear	☐ Turbid	Sheen on Surfac	☐ Floating Algalmats	
Slightly Turbid	☐ Very Turbid	Greenish Color	Obvious Surface Scum	
No Flow	Other:			
Stream Substrate %:				
Aquatic Habitats:				
Sand Bar	Gravel Riffle	In-stream	Emergent Plant % Cover:	
Gravel Bar	Deep Pools	In-stream	Submerged Plant % Cover:	
Mud Bar	Bank Root Systems	s Fringing W	etlands Characteristics:	
Undercut Banks	Overhanging Trees	S/Shrubs None		
Aquatic Organisms Obs	erved: None			
	140112			
Riparian Zone:				
			to Flood Plain (ft): Left - 10	Right - 10
	Herbs Shrubs			
Significant Bare Area	as Within Riparian Zone	Yes No 🗆	Jnknown	
Evidence Of Non-Bu	ffered Concentrated Flo	ows: Yes No	] Unknown	
Tributary Condition:		rtificial (Man-Made)		
Channel Condition:	Channelization/Braid			
	Dikes/Berms			
Diet bereit		Excessive E		
	AND DESCRIPTION OF THE PARTY OF	THE RESERVE OF THE PARTY OF THE PERSON NAMED IN	anure In Stream or On Banks	
	Waste Discharge Pi	pes Present		
	Other:			
Habitat Characteristics	Aquatic, and Terrestrial Di			
Habitat ID Number:	Aquatic, and Terrestrial Di	versity Description:		
Habitat ID Halliber.				
Comments:				
Stream Quality:	High Moderate	Low		
	7			

	RROLV FaCERV For I caperolegion Lion 1 of Other
E Centerline ☐ Ro-Route ☐ Access Road ☐ Anol Centerline ID:	Project Designated Name:
_5567DAOON	1 ' * ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' ' '
Date: Client/Project Name:	1 Interm. Heat tr. b - Berg Creek Milepost Entor/Exit:
6/10/11 KXL Phase W	
Team: State/County:	
BSG7 MT Davis	Quad Name:
Logbook No : Logbook Page No .: Tract No .:	
1,110,110,1	A MATERIA DA LA
	- MT - DA - 200,0000
Drawing (Please provide orientation arrow, all features identified, loc	cation to centerline, etc.)
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the second secon	:
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Waterbody Type: Take Tapond Taborrow Pit 15% S	Stream iii Aa Diich 📆 Other
Signe Strong Chronowalt (No	
Stream Flow: Fast Moderate Solow	Very Slow 📵 None
Stream Flow: Fast Moderate Solow Flow Type: Perennial (Flows year round)	] Very Slow ☐ None ☐ Intermittent (Flows <3 month ☐ None
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo	Very Slow 📵 None
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo	] Very Slow ☐ None ☐ Intermittent (Flows <3 month ☐ None
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo  Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐	☑ Very Slow ☑ None ☑ Intermittent (Flows <3 month     □ None onths) ☐ Ephemeral (Flows only in response to rainfall)
Stream Flow: ☐ Fast ☐ Moderate ☐ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo  Direction of Flow: ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): 2 /	Very Slow ☐ None  ☑ Intermittent (Flows <3 month ☐ None onths) ☐ Ephemeral (Flows only in response to rainfall)  ☑ S ☐ SW ☑ W ☐ NW ☐ No Flow
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo  Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): 2 /  Sinuosity: ☐ Braided ☑ Meandaring	Very Slow ☐ None ☐ Intermittent (Flows <3 month ☐ None onths) ☐ Ephemeral (Flows only in response to rainfall) ☐ S ☐ SW ☐ W ☐ NW ☐ No Flow ☐ Straight ☐ N/A
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo  Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): 2 /  Sinuosity: ☐ Braided ☑ Meandering  Stream Width (ft.): 2 / War	Very Slow ☐ None ☐ Intermittent (Flows <3 month ☐ None onths) ☐ Ephemeral (Flows only in response to rainfall) ☐ S ☐ SW ☐ W ☐ NW ☐ No Flow ☐ Straight ☐ N/A mer Surface (At Crossing Location)
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo  Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): 2 /  Sinuosity: ☐ Braided ☑ Meandering  Stream Width (ft.): 2 / War	Very Slow ☐ None ☐ Intermittent (Flows <3 month ☐ None onths) ☐ Ephemeral (Flows only in response to rainfall) ☐ S ☐ SW ☐ W ☐ NW ☐ No Flow ☐ Straight ☐ N/A
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo  Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): 2 /  Sinuosity: ☐ Braided ☑ Meandering  Stream Width (ft.): 2 / Wa  Stream Depto (ft.): ☐ 0 ☑ 1-3 ☐ 3-6 ☐ 6-12	Very Slow ☐ None  ☐ Intermittent (Flows <3 month ☐ None onths) ☐ Ephemeral (Flows only in response to rainfall) ☐ S ☐ SW ☐ W ☐ NW ☐ No Flow ☐ Straight ☐ N/A mer Surface (At Crossing Location)
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): ② / Sinuosity: ☐ Braided ☑ Meandering Stream Width (ft.): ② / War Stream Depth (ft.): ☐ 0 ☑ 1-3 ☐ 3-6 ☐ 6-12 OHWM Indicators: ☐ bc. + ✓ □ C+ □ ← □	Very Slow   None   N
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): ② / Sinuosity: ☐ Braided ☑ Meandering Stream Width (ft.): ② / War Stream Depth (ft.): ☐ 0 ☑ 1-3 ☐ 3-6 ☐ 6-12 ☐ OHWM Indicators: ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ OHWM Indicators: ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6	Very Slow   None   N
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo  Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): ② /  Sinuosity: ☐ Braided ☑ Meandering  Stream Width (ft.): ② / War  Stream Deptin (ft.): ☐ 0 ☑ 1-3 ☐ 3-6 ☐ 6-12  OHWM Indicators: ○	Very Slow None  Intermittent (Flows <3 month None onths) Ephemeral (Flows only in response to rainfall)  S SW W NW NO Flow  Straight N/A mer Surface (At Crossing Location)  12-18 18-24 12-24-36 13-6-48 148-60 60+  16-6 18-8+
Stream Flow: ☐ Fast ☐ Moderate ☑ Slow ☐ Flow Type: ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 mo Direction of Flow: ☑ N ☐ NE ☐ E ☐ SE ☐ OHWM Width (ft.): ② / Sinuosity: ☐ Braided ☑ Meandering Stream Width (ft.): ② / War Stream Depth (ft.): ☐ 0 ☑ 1-3 ☐ 3-6 ☐ 6-12 ☐ OHWM Indicators: ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ OHWM Indicators: ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6 ☐ 1-3 ☐ 3-6	Very Slow   None   N

Qualitative Attribut	As				
Water Appearance:		————————————————————————————————————	, <u></u>		
Clear Slightly Turbid Stream Substrate Wo	☐ Turbici ☐ Very Turbid ☐ Other:	Sheen on Surfac Greenish Color	Floating Algalmats Obvious Surface Scr	an,	
Aquado Habitars:		·			
C Sand Bar C Gravet Bar Mud Bar Undercut Banks	<u> </u>	🖫 In-stream	Emergent Plant % Cov Submerged Plant % Cov Vetlands Characterisfics:		
Aquatic Organis ms Obs	served:				
į.		Edge of Active Channel ou	Left -	Right -	
Significant Bare Are Evidence Oi Mon-Bu	as Within Riparian Z	one []Yes []No [] IFlows: []Yes []No [	Unknown ] Unknown		
Tribulary Condition:	52 Natural ⊊	] Artificial (Man-Made)	] Manipulated		
Charmet Condition:	☐ Channelization/B ☐ Dikes/Berms	raiding 📋 Unnatural S		tting	
Distuibances:	S Livestock Access  ☐ Waste Discharge ☐ Other:		anure in Stream or On Bar	iks' ,	-
Rabiful Classical regions	Aquatic, and Terrestria	Diversity Description			
Habitat ID Number:	added and lessanta	d Streeting boom paon.	•	4	
Ce.	ingeland		100 100 100 100 100 100 100 100 100 100		
Comments					
	a ccess	to stream			
				· 	
Stream Quality:	High ⊠ Moderate	Low			<del>_</del> _
			:		

Centerline	
Centerine ID:	Project Designated Name:
55C 7 DA 00 7	intermitted tr. butary
Date: Client/Project Name;	Milepost Enter/Exit:
Team: KxL Phase III	Ana wysoanna
0.0	Quad Name:
Logbook No.: Logbook Page No.: Tract No.;	
Cognosia (vi). Prigodosa Page (vol., hadrito.,	-MT-DA-00765 000
Drawling (Piease provide orientation arrow, all features identified, location	on to centeraliae, etc.)
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Waterbody Type:   Lake   Pond   Borrow Pit   Stre	am 🗐 Ag. Dilch 🖂 Other
	ery Slow 🙀 None
Salar of the state	☑ Intermittent (Flows <3 month ☐ None
[	s) Ephemeral (Flows only in response to rainfall)
TA CIAL CO. CO.	S SW W NO Flow
DHWM Wittin (ft.):	·
	] Straight (□) N/Λ
Stream Width (ft.): 20 Water	Surface (At Crossing Location)
· · · · · · · · · · · · · · · · · · ·	12-18 🗍 18-24 📋 24-36 😭 36-48 🖺 48-60 🖾 60+
Output Indiantors	Management of the second of th
per restarion of ye	W(.)
( Constitution of the control of the	6-8 🖫 8+
Right: [] 0-2 1   2-4 [1] 4-0	₹ 6-8
	∐ 1:1 ☐ Vertical
(Looking Downstream) Right: 1341 31 1 28 211	☑ 1:1    Vertical
<del></del>	Approximation of the contract

	Qualifative Attribut	t <del>e</del> s							
	Water Ap pezranice;		·		·				
	Clear	🖾 Turbid	E		-				· · · · · · · · · · · · · · · · · · ·
	Sligh By Turbid	☐ Very Turbid		n on Surfac	Tloating				
14.1.	□ No Flow	Other:	F3 <b>6</b> 166	nish Color	[] Obvious	Surface Scur	n :		
	Stream Stubstrake %:			_ ,					
	Aguario Mabitars:	·							
	(El Sard Bar	El Grave! Riffle		Side II.	<b>.</b>				
	(	Deep Pools			Emergent Plan				
	Mud Bar	Bank Root Syste			Submerged Pl		r:		
	Undermi Banks			El ranging vi	Vetlands Cha	i <b>racte</b> ristics:			
	1		ees/Smuds	Fil Notie					
٠.	Aquatic Organisms Ob	-Barvod:	·						
	Riparian Mone:								
. • .	Width of Natural Ve	gatation Zone from E	dae of Activ	re Channel ou	t la Flood Plaid	r(fil): Left -		Right -	
		₩ Herbs 🖺 Shrubs			t to 3 10001 IEE	(ic). Lete-		1718111 4	*. *
		eas Within Riparian Z			I &l	· ·			
100	Fuldence Of Non-R	uilered Concentraled	Strate (1978)	s givo gi	Onknown			•	
	Transacy Condition:	;-·					<del>-</del>	<u>-</u>	
19.7	1	5% Natural €		Man-Made) [	1 Manipulated	· <del></del>	,_ <u>.</u>		
	Change Condition:	Channelization/Br		🗍 Unnatural S		Downcutt	ing		
	!	☐ Dikes/Berms	[	] Excessive 8	Bank Erosion	∰ N/A			
	Distablences:	Livestock Access	to Riparian	Zone Film	anure in Strea	m or On Bank	s	:	
	 	☐ Waste Discharge	•				٠.		
	: :	C Other:							
• • • •									
1.	į.	, Aquatic, and Terrestria	Diversity Ds	scription:			:		
	Habitat ID iviumber:	Mowed past	mrc/h.	matricle		:			
٠.	· !	•	,	1			;		
						14.5 14.			
1	Committee		····						
	Comments:							!	
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	Streem Quelity: Cit							· · · · · · · · · · · · · · · · · · ·	
	i ditem quemy.	High 🕞 Moderate	Œ row				:		
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Centerline   Electropies   Facute   Electropies   Electr	S Centerline Li Re-Route Li Access Road C Ancillant	Facility El Transmission Line Fil ou
Direct   Clear   Project Name:   Milepool Enter/Exit   N.Y.   Pho. St.	Centertine ID:	Project Designated Normal
Tear:	5507DA003	(
Tear:     State   County	Defe: Client/Project Name:	
Part	10/11/11 KXL Phase TV	whichost confedition
Copbook No.   Logbook Page No.   Track No.   PKT - DA - 00 2 0 5 6 0 0	Tear: State/County:	Ouad Name
Display   Company   Comp	BSG7 MT Dawson	Quad valifo.
Drawling (Firmse provide orientation arrow, all features identified, location to centerline, etc.)	Logbcok No.: Legbook Page No.: Trad No.:	
Waterhordy Type:     Lake	ML- M7	1-DA-00205 000
Waterbody Type:     Lake	Orewing (Piense provide orientation arrow, all features identified, location	to centerline, etc.)
Waterbody Type:     Lake		المستورين والمستورين
Waterbody Type:     Lake		* 🔾
Waterbody Type:     Lake		1/4
Waterbody Type:     Lake	and the control of t The control of the control of	
Waterbody Type:     Lake		
Waterbody Type:     Lake		
Waterbody Type:     Lake		
Waterbody Type:     Lake	Var V	
Stream Flows   Fast   Moderate   Slow   Very Slow   None	(\ 360	
Stream Flows   Fast   Moderate   Slow   Very Slow   None		and the second s
Stream Flows   Fast   Moderate   Slow   Very Slow   None	(4)	
Stream Flows   Fast   Moderate   Slow   Very Slow   None		
Stream Flows   Fast   Moderate   Slow   Very Slow   None	aw	
Stream Flows   Fast   Moderate   Slow   Very Slow   None	<b>\</b> \'.	
Stream Flows   Fast   Moderate   Slow   Very Slow   None		
Stream Flow   Fast   Moderate   Slow   Very Slow   None	Waterbody Type:   Lake   Pond   Borrow Pit   Stream	n [] Ag. Ditch [] Other
Flow Type: ☐ Perennial (Flows year round) ☐ Intermittent (Flows <3 month ☐ None ☐ Seasonal (Continuous flow ≥ 3 months) ☐ Ephemeral (Flows only in response to rainfall)  Direction of Flow: ☐ N ☐ NE ☐ E ☐ S ☐ SW ☐ W ☐ NW ☐ No Flow  OHWM Width (ft.): 3 !  Sinuosity: ☐ Braided ☐ Meanufering ☐ Straight ☐ N/A  Stream Width (ft.): ☐ 0 ☐ 1-3 ☐ 3-6 ☐ 6-12 ☐ 12-18 ☐ 18-24 ☐ 24-36 ☐ 36-48 ☐ 48-60 ☐ 60+  OHWM Indicators: bc ↑ V C 5	Bi	
Seasonal (Continuous flow ≥ 3 months)		
Direction of Flow:         □ N □ NE □ E □ SE □ S □ SW □ W □ NW ♠ No Flow           OHWM Width (ft.):         3 :           Sinusity:         □ Braided         ☑ Meanufering         □ Straight         □ NA           Stream Width (ft.):         2 : 1         Water Surface (At Crossing Location)           Stream Depth (ft.):         □ 0 □ □ 1-3 □ 3-6 □ 6-12 □ 12-18 □ 18-24 □ 24-36 □ 36-48 □ 48-60 □ 60+           OHWM Indicators:         bc + ∨ c 3ctra t ⇒           Bank Haight (it.):         Left:         ☑ 0-2 □ 2-4 □ 4-6 □ 6-8 □ 8+           Bank Steps:         Left:         ☑ 4:1 □ 3:1 □ 2:1 □ 1:1 □ Vertical           Right:         ☑ 4:1 □ 3:1 □ 2:1 □ 1:1 □ Vertical           Right:         ☑ 4:1 □ 3:1 □ 2:1 □ 1:1 □ Vertical	El recentrar (crows legicogna)	-
OHWM Width (ft.): 3 :           Sinusity:         □ Braided         ☑ Meanufering         □ Straight         □ N/A           Stream Width (ft.):         2 (1)         □ Water Surface (At Crossing Location)           Stream Depth (ft.):         □ 0         □ 1-3         □ 3-6         □ 6-12         □ 12-18         □ 18-24         □ 24-36         □ 36-48         □ 48-60         □ 60÷           OHWM Indicators:         bc. + ∨ c.getax t.c.         bc. + ∨ c.getax t.c.         □ 8+           (Looking Downstream)         Left:         ∑ 9-2         □ 2-4         □ 4-6         □ 6-8         □ 8+           Bank Steps:         Left:         ∑ 4:1         □ 3:1         □ 2:1         □ 1:1         □ Vertical           (Looking Downstream)         Left:         ∑ 4:1         □ 3:1         □ 2:1         □ 1:1         □ Vertical	F. 11 F.	· · · · · · · · · · · · · · · · · · ·
Sinusity:   Braided   Meanufering   Straight   N/A	THE PART OF THE	SW DW DNW No Flow
Stream Width (FL):	OHWM Width (ft.): 3 i	
Stream Width (FL):   261	Sinuosity: Braided 🔀 Meanuering 🗍	Straight 🦳 N/A
Stream Depth (ft.):   0	Stepan Widto (E.):	
OHWM Indicators:         bc. + ∨ c get at to.           Bank Halght (it.):         Left:         № 0-2         □ 2-4         □ 4-6         □ 6-8         □ 8+           (Looking Downstream)         Right:         ☑ 0-2         □ 2-4         □ 4-6         □ 6-8         □ 8+           Bank Steps:         Left:         ☑ 4:1         □ 3:1         □ 2:1         □ 1:1         □ Vertical           (Looking Downstream)         Right:         ☑ 4:1         □ 3:1         □ 2:1         □ 1:1         □ Vertical		0.49 50 40 04 50 04 90 50 20 40 50 40 00 50 00
Bank Height (it.):		2-10 ( 10-24 ( 24-30 ) 30-48 ( 48-00 ( ) 00+
Bank Harght (it.):	beat vegetation	
Bank Steps:   Left:   4:1   3:1   2:1   3:1   Vertical	Bank Height (Մ.)։ Leift: 🧏 0-2 🖂 2-4 🗍 4-6 🛄	6-8 [] 8+
Bank Stope:   Left:   3 4:1   3:1   2:1   1:1   Vertical	(Looking Downstreem) Right: X 0-2 72-4 46 7	6-8 🗍 8+
(Looking Downstream) Right: 反 4:1 □ 3:1 □ 2:1 □ 1:1 □ Vertical	<u> </u>	1:1   Vertical
	: A posting Dougasteann)	
	Fig. 17 (1) 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	TT TT Vertical

	Qualitative Attribut	tes							
	Water Appearance:								
	Glear Slightly Turbid No Flow Stream Substrate %:	☐ Turbid☐ Very Turbid☐ Other:	☐ Sheen ☐ Green	on Surfac ish Color	☐ Floating	Algalmats Surface Scu	in		
	Aquado Mabitate:    Sand Ber   Gravet Bar   Mud Bar   Undercut Banks	∰ Gravel Riffle ∰ Deep Pools ∰ Bank Root Syste ∰ Overhanging Tre	ens (	⊡ In-stream ⊡ Fringing V	Emergent Plai Submerged Pl Vetlands Cha	ant % Cove			
	Aquatic Organisms Ob	Served:		,—,,- <u></u> ,					·
	Vegetative Layers; Significant Bare Are Evidence Of Mon-Br	gstation Zone from E Herbs () Shrubs as Within Riparian Zoufered Concentrated	Trocs [	] Multiple	Unknown	ı (ft): Left -		Right -	
****	Tributary Condition:	🔯 Natural 🏗	The second secon				<u>i</u>	:	
	Clannel Condition:	☐ Channelization/Br ☐ Dikes/Berms			itraightening Bank Erosion	Downcul	ting		
	Dislumances:	Sk Livestock Access ☐ Waste Discharge ☐ Other:	•		anure In Strea	m or On Ban	ks	:	
	Habitat ID Number:	, Aquatic, and Terrestrice							
	Comments:						7:,		
		:							
	Stream Quality:	High Moderate						·	
	l)	(agti []) Motorate	(X) resw				1	•	
					<del></del>	:		1 2 4 4	
						iv No.	:		
								. :	
						:			

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	∃Re-Route 📋 Access Road 🔲 Ancillar	y Facility 🖺 Transmission Line 💻 Other 🕵 V
Centerline ID:	Pita Anna	Project Designated Name:
21	IIVAooi	epheneral stream
Date:	Client/Project Name:	Milepost Enter/Exit:
7/7/11	KXL BLM RV	33.82
Team:	State/County:	Quad Name;
8711	MT / Valley	
Logbook No.:	Logbook Page No.: Tract No.:	
	NL-M	IT-VA - 0 0127.000
Director (Discourse		
Drawing (Please pr	ovide orientation arrow, all features identified, location	on to centerine, etc.)
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	\$101VA	1
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·	Control of the second of the s	1
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	3	Reco
	1,023	
Waterbody Type:	☐ Lake ☐ Pond ☐ Borrow Pit 🔀 Stre	am. □ Ag. Ditch. □ Other
Stream Flow:		
	☐ Fast ☐ Moderate ☐ Slow ☐ Ve	ery Slow 🖟 None
Flow Type:	Perennial (Flows year round)	☐ Intermittent (Flows <3 month ☐ None
] }	Seasonal (Continuous flow ≥ 3 months)	s) 🗷 Ephemeral (Flows only in response to rainfall)
Direction of Flow:	ON ONE DE DSE DS	
OHWM Width (ft.):		S SW W NW No Flow
	1.5 ft	
Sinuosity:	☐ Braided	] Straight ☐ N/A
Stream Width (ft.)		Surface (At Crossing Location)
1	10 FT (TOB-TOB)	None
Stream Depth (ft.)		12-18 🗍 18-24 📋 24-36 📋 36-48 📋 48-60 📋 60+
OHWM Indicators		
Bank Height (ft.):	<del></del>	്ര ്ര.
(Looking Downstrea	am)	<u></u>
, , , , , , , , , , , , , , , , , , , ,	a'''' Ríght: 🛣 0-2 🗌 2-4 🔲 4-6 [	<u></u> 6-8
Bank Slope:	Left: <b>№</b> 4:1 ☐ 3:1 ☐ 2:1	1:1 ☐ Vertical
(Looking Downstre	am)	
		1:1

		· ·			
·					
Qualitative Attribut					
Water Ap pearance:					
Clear	☐ Turbid	Sheen on Surfac	☐ Floating Algalmats		
Slightly Turbid	☐ Very Turbid	Greenish Color	Obvious Surface Scum		
No Flow	Other:				
Stream Substrate %:	<u></u>				······································
Aquatic Habitats:					
Sand Bar	☐ Gravel Riffle		Emergent Plant % Cover:		
Gravel Bar	Deep Pools		Submerged Plant % Cover:		••
Mud Bar	Bank Root System		Vetlands Characteristics:		
☐ Undercut Banks	Overhanging Tr	ees/Shrubs 🔲 None			
Aquatic Organisms Ob	served:				
Riparian Zone:					
1 '	getation Zone from E	Edge of Active Channel ou	t to Flood Plain (ft): Left -	Right -	
ţ		s Trees Multiple			
, -		one Yes No	Lintennem		
		l Flows: ☐ Yes ☐ No 〔			
Tributary Condition:	·	<del> </del>	<del></del>		
<u> </u>	<b>⊗</b> Natural [	] Artificial (Man-Made) · [	Manipulated		
Channel Condition:	Channelization/B	raiding 🔠 Unnatural S	Straightening 🔝 Downcuttin	g	
	Dikes/Berms	Excessive 1	Bank Erosion 🔲 N/A		
Disturbances:	Livestock Access	s to Riparian Zone	lanure in Stream or On Banks	-	
	☐ Waste Discharge	,			
. [	Other:				
		180			
	, Aquatic, and Terrestria	il Diversity Description:		· · · · · · · · · · · · · · · · · · ·	
Habitat ID Number:	pasture			• •	
Comments:					
COPI	ole substruk		· *		
Stream Quality:			-		
Stream Quarty.	] High   Moderate	₩ Low			
	water presen	À.			
ho v	~ K 10   K 1 - 1				
		•			
	eren. Germania				

Centerline Re-Route Access Road Ancillary Facility Transmission Line Other
Centerline ID:  Project Designated Name:
Date: 8/26/13 Client/Project Name: Exp Milepost Enter/Exit: 182,85
802 State/County: MT/Dawson Quad Name:
802 12 ML-MT-DA-GO270,000 MI-MT-DA-00280.
Drawing (Please provide orientation arrow, customate identified, location to centerline, etc.)
1~
Grassland,
Grass land 2
Waterbody Type: 圖 Lake 圖 Pond 圖 Borrow Pit 画 Stream 圖 Ag. Ditch 圖 Other
Stream Flow: Stream Flow: Stow Stow Very Slow None
Flow Type:  Perennial (Flows year round)  Intermittent (Flows <3 month  None
Seasonal (Continuous flow ≥ 3 months Ephemeral (Flows only in response to rainfall)
DIFFECTION OF FIOW: IN
19
Sinuosity: Braided Meandering Straight N/A
Stream Width (ft.): Water Surface (At Crossing Location)
Stream Depth (ft.):
DHWM Indicators: Vorined Bedt Bonk
Bank Height (ft.): Left: ■ 0-2 ■ 2-4 ■ 4-6 ■ 6-8 ■ 8+
(Looking Downstream) Right: 8 0-2 2-4 2-6 6-8 8+
Bank Slope: Left: ■ 4:1 ■ 3:1 ■ 2:1 ■ 1:1 ■ Vertical
(Looking Downstream)  Right: 3:1 3:1 Severtical

Water Ap pearance:
A Popular (6:
图 Clear 图 Turbid 图 Shows Co. 4
■ Slightly Turbid ■ Very Turbid ■ Greenish Color ■ Obvious Systems Color ■ Ob
Mo Flow Other: O
Stream Substrate %:
Aquatic Habitats:
■ Sand Bar ■ Gravel Riffle ■ In attack F
□ Gravel Bar □ Cover:
Mud Bar Bank Root Systems Submerged Plant % Cover:
■ Undercut Banks
Aquatic Organisms Observed:
Riparian Zone:
Width of Natural Vegetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - Right -
Vegetative Layers: Herbs Shrubs Trees Multiple  Right -
Significant Bare Areas Within Dinaria ス
Significant Bare Areas Within Riparian Zone
Evidence Of Non-Buffered Concentrated Flows:   Yes No In Unknown  Tributary Condition:
Natural  Artificial (Man-Made) Manipulated
Channelization/Braiding Unnatural Straightening Downsetting
圖 Dikes/Berms
Diotal balloes.
Waste Discharge Pipes Present
Other:
Habitat Characteristing Amenally
Habitat Characteristics, Aquatic, and Terrestrial Diversity Description: Habitat ID Number:
None
Comments:
/
None
Stream Quality:   High Moderate Low

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5802mc001

Centerline Re	-Route 🗐 Acces	s Road 📳 Ancil	lary Eacility	Transmission Lir	ne 🗐 Other	
Centerline ID:			Project Desi	gnated Name:	<u> </u>	
		· ·				
Date: 8/23/13	Client/Project Name:			Mil	epost Enter/Exit:	21
Team: 802	State/County	MT/m	Kore	·	Quad Name:	
Logbook No.: Logb	pook Page No.:	Tract No.	ML-MI	- MC-00	158.000	
Drawing (Please provide	orientation arrow, ali j	and the same of th	and the second of the second of the second			
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11/	}				t	•
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Rerowt						157
0	1 -5	<b>\</b> ,	3 -0			多
Ron	/ <b>\_</b> >				,	
18	)				. •	ı
			pastive		~	1 _
	1		19310 C		ě	ICL
					ć	1
Waterbody Type:			-		,	
Ctrone Elaw	territoria de la constitución de la	Borrow Pit S	<u> </u>	37454		
赵「		And the second property of the second	Very Slow	lone	-	
	Perennial (Flows	•		ttent (Flows <3 n		None
The Control of Control (1997) and the Control of Contro		The same of the sa		eral (Flows only	in response to rain	fall)
Direction of Flow:	V BNE	SE I	S SW	₩ W B NW	No Flow	
OHWM Width (ft.):	<u> </u>				<del>رة</del>	
·	Braided 2	Meandering	Straight	■ N/A		
Stream Width (ft.):	8-10	Wat	er Surface (At Cros	sing Location)		
Stream Depth (ft.):		3-6 🗑 6-12	■ 12-18 ■ 18-	,,,	36-48 🗃 48-60	<b>■ 60+</b>
OHWM Indicators:	De	fined Bed	1+ Bonk			
Bank Height (ft.):	Left: 🗐 0-2	2-4 4-6	<b>3</b> 6-8 <b>3</b> 8	+		
(Looking Downstream)	Right: 8 0-2	2-4 2 4-6	<b>36-8 38</b>	+		
Bank Slope:	Left: 2 4:1	3:1 2:1	園 1:1 園 V	ertical	· · · · ·	
(Looking Downstream)	Right: <b>3</b> 4:1	<b>3:1 2:1</b>		ertical		

Qualitative Attribu	tes	***************************************	and the second of the second o	
Water Ap pearance:  Clear Slightly Turbid No. Flow	Turbid Very Turbid Other:	Sheen on Surfac Greenish Color	圖 Floating Algalmats 國 Obvious Surface Scum	
Stream Substrate %:				
Aquatic Habitats:  Sand Bar  Gravel Bar  Mud Bar  Undercut Banks  Aquatic Organisms Ob	Gravel Riffle  Gravel Riffle  Beep Pools  Bank Root System  Overhanging Trees	图 In-stream s	Emergent Plant % Cover: Submerged Plant % Cover: /etlands Characteristics:	
Riparian Zone:				
Width of Natural Ve Vegetative Layers: Significant Bare Are	getation Zone from Edg Herbs  Shrubs  as Within Riparian Zone uffered Concentrated Flore	I rees Multiple	to Flood Plain (ft): Left - ) () Unknown	) + Right - 100+
Tributary Condition:		444		
Channel Condition:	Channelization/Braic Dikes/Berms	the state of the s		
Disturbances:	Livestock Access to Waste Discharge Pi Other:	Riparian Zone	anure In Stream or On Banks	
Habitat Characteristics Habitat ID Number:	, Aquatic, and Terrestrial Di	versity Description:		
	NO FE			
Comments:		The state of the s		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
	Non	e		
Stream Quality:	High Moderate	Low	7:	
· · · · · · · · · · · · · · · · · · ·				

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# 5802MC003

Centerline  Re-Route  Access Road  Ancillar	y Facility 🔞 Transmission Line 🕮 Other
Centerline ID:	Project Designated Name:
Date: 8/23/13   Client/Project Name:	Milepost Enter/Exij: 09,22
Team: 802 State/County: MT/MC	
Logbook No.: Logbook Page No.: Tract No.:	ML-MT-MC-00 185,000
Drawing (Please provide orientation arrow, all features identified, local	
TN:	
	1
,	
$\rightarrow$	
(	
4	
Waterbody Type:   Lake Pond Borrow Pit Street	eam
	ery Slow ၨ <b>≱</b> ⊈None
Flow Type: Perennial (Flows year round)	Intermittent (Flows <3 month None  A Ephemeral (Flows only in response to rainfall)
Direction of Flow: N NE E SE	
OHWM Width (ft.):	
Sinusity: Braided Meandering	■ Straight ■ N/A
	Surface (At Crossing Location)
Stream Depth (ft.): <b>3</b> 0 <b>3</b> 1-3 <b>3</b> 3-6 <b>6</b> 6-12	12-18 圖 18-24 圖 24-36 圖 36-48 圖 48-60 圓 60+
OHWM Indicators: Defined Bedt	Bonk
Bank Height (ft.): Left: 國 0-2 國 2-4 國 4-6	<b>2</b> 6-8 <b>2</b> 8+
	<b>■ 6-8 ■ 8+</b>
(Looking Downstream)	圖 1:1
Right: 3:1 2:1	图 1:1 图 Vertical

Qualitative Attribu	tes	en e	en e		
Water Ap pearance:					
Clear	Turbid	Sheen on Surfac	Floating Algalmats		
Slightly Turbid	■ Very Turbid	■ Greenish Color	Obvious Surface So	cum	
■ No Flow	Other: 014				
Stream Substrate %:	3			1	
Aquatic Habitats:		<u> </u>		,	
■ Sand Bar	Gravel Riffle	n-stream	Emergent Plant 60% Co	ver:	
■ Gravel Bar	Deep Pools	<b>/</b> , ,	Submerged Plant % Co		
Mud Bar	■ Bank Root Syste	Additional to the second secon	etlands Characteristics		
■ Undercut Banks	Overhanging Tree	ees/Shrubs 📳 None			
Aquatic Organisms Ol	oserved:	•			
					<del></del>
Riparian Zone: Width of Natural Va	agetation Zone from E	dan of Antico Changel and	to Flood Plain (ft): Left -	lost out 1	nit
Variation I accord	Setation 2016 North	age of Active Channel ou	το Plood Plain (π): Leπ -	Right - /C	<i>10</i> ·
Clanificant Dana A-	and Within Dispersion 7	Trees Multiple			
Significant Bare Are	eas within Riparian Zi	one Yes No I	Jnknown		
Tributary Condition:		Flows: Yes No	Unknown		
	Natural 📳	] Artificial (Man-Made)	] Manipulated		
Channel Condition:	Channelization/Bi	raiding 📳 Unnatural S	traightening	utting	
	■ Dikes/Berms	Excessive E	Bank Erosion 🔞 N/A		
	Waste Discharge Other:	Pipes Present	anure In Stream or On Ba	nks	
Habitat Characteristics	s, Aquatic, and Terrestria	Diversity Description:			
Habitat ID Number:					
The second of the second					
•	Non	િ			
					ela.
Comments:	<del>,</del>			40 to 10 to	
	Mana				
	100				
	•				
Stream Quality:				~	
<b>*</b>	High   Moderate	I low			
		<b>,</b>	F1		
					^ <del>-</del> ~-

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5802 MC 005

Centerline Re-Route Access Road	Ancillary Facility 📓 Transmission Line 🗐 Other
Centerline ID:	Project Designated Name:
Date: 8/24/13 Cilent/Project Name:	Milepost Enter/Exit: 154, 64
Team: 802 State/County:	McCone Quad Name:
Logbook No.: Logbook Page No.: Tract I	
Drawing (Please provide orientation arrow, all features ide	ilffied, location to centerine, etc.)
TN Grassland	Grasslands  CL
Waterbody Type:   Lake Pond Borrow I	Pit Stream Ag. Ditch Other
Stream Flow: Fast Moderate Slo	w 📓 Very Slow None
Flow Type:  Perennial (Flows year rour  Seasonal (Continuous flow	d)
Direction of Flow: N B NE B E	
OHWM Width (ft.): 20+	
Sinuosity: Braided B Meande	ring 🔳 Straight 📳 N/A
Stream Width (ft.): 30 - 40	Water Surface (At Crossing Location)
C4	20*
OHWM Indicators:	6-12 圖 12-18 團 18-24 圖 24-36 圖 36-48 團 48-60 圆 60+
Det next	Bed + Band
Bank Height (ft.): Left: -0-2 = 2-4 (Looking Downstream)	<b>國 4-6 國 6-8 國 8+</b>
Right: 1970-2 2-4	<b>3</b> 4-6 <b>3</b> 6-8 <b>3</b> 8+
Bank Siope: Left: 4:1 3:1	
Right: <b>2</b> 4:1 <b>3:1</b>	■ 2:1 ■ 1:1 ■ Vertical

≀ualitatrve Attribut	es		Programme management	
Water Ap pearance:				
Clear	Turbid	■ Sheen on Surfac	國 Floating Alastracts	
Slightly Turbid	Very Turbid	Greenish Color	圈 Floating Algalmats 圈 Obvious Surface Scum	
圏 No Flow	Other: 0/y		E Obvious Guirace Gcuiii	
Stream Substrate %:				
Aquatic Habitats:		· · · · · · · · · · · · · · · · · · ·		
■ Sand Bar	Gravel Riffle	In-stream I	Emergent Plant	
■ Gravel Bar	Deep Pools	☑ In-stream S	Submerged Plant % Cover:	
■ Mud Bar	Bank Root Sys	tems 🔳 Fringing W	etlands Characteristics:	
■ Undercut Banks	Overhanging T	rees/Shrubs 📳 None	onardotoristics.	
Aquatic Organisms Ob:				
Riparian Zone:				
The state of the s	notation Zone from t			
Vacatative I	Seranon Zone nom	Edge of Active Channel out	to Flood Plain (ft): Left -	Right -
vegetative Layers:	meros Shrub	s Trees Multiple		
Evidence Of No. 2	as vvitnin Riparian Z	Zone Yes Vo	Jnknown	·
Tributary Condition:		d Flows: Yes No	Unknown	
	Natural [	🗑 Artificial (Man-Made) 🏾 🖻	Manipulated	
Channel Condition:	Channelization/E	Braiding 📓 Unnatural St	traightening 📳 Downcutting	
	Dikes/Berms	Excessive B		
	<ul><li>☑ Livestock Acces</li><li>☑ Waste Discharge</li><li>☑ Other:</li></ul>		anure In Stream or On Banks	
Habitat Characteristics.	Aquatic, and Terrestri	al Diversity Description:		
Habitat ID Number:	requatio, and Terrestri	ai Diversity Description:	·	
	•			
Comments:				i de la companya de l
1: "	ſ	Vane		, 19 % 
	y			i
				:
Stream Quality:	Nich Cont.		*	
囊	High 📓 Moderate	Low		
	,	'		

Centerline Re-Route Access Road Ancillary	Facility Transmission Line Other
Centerline ID:	Project Designated Name:
Date: 8/28/13 Client/Project Name:	Milepost Enter/Exit: 168, 32
Team: 901 State/County: MT/Pawsa	Quad Name:
Logbook No. Logbook Page No. LTract No.	MT-DA-00095,000
Drawing (Please provide orientation arrow, all features identified, location	to centerline, etc.)
TN Grasslands  Agoipa	590/p4002 1 6-1955/ands
Waterbody Type: A Lake Pond B Borrow Pit Strea	m 🟿 Ag. Ditch 🖫 Other
The state of the s	y Slow None
Flow Type:  ☐ Perennial (Flows year round) ☐ Seasonal (Continuous flow ≥ 3 months	☐ Intermittent (Flows <3 month ☐ None  Ephemeral (Flows only in response to rainfall)
Direction of Flow: N NE NE SE SS	SW W No Flow
OHWM Width (ft.):	
Sinuosity: Braided Meandering	Straight ■ N/A
The second secon	irface (At Crossing Location)
	12-18   図 18-24   図 24-36   図 36-48   図 48-60   図 60+
QUMM Isologicas	nd + OHOVM
Bank Height (ft.): Left: 0-2 2-4 2-4 4-6	6-8
(Looking Downstream) Right: 0-2 2-4 4-6	6-8 🛮 8+
Bank Slope: Left: 2 4:1 3:1 2:1	1:1 📓 Vertical
(Looking Downstream)	1:1 🗐 Vertical

#### **Qualitative Attributes** Water Ap pearance: 圖 Clear 图 Turbid Sheen on Surfac Floating Algalmats Slightly Turbid ■ Very Turbid ■ Greenish Color Obvious Surface Scum Other: ■ No Flow Stream Substrate %: Aquatic Habitats: Sand Bar In-stream Emergent Plant I 00% Cover: Gravel Riffle ■ Gravel Bar In-stream Submerged Plant % Cover: Deep Pools Mud Bar Bank Root Systems Fringing Wetlands Characteristics: ■ Undercut Banks Overhanging Trees/Shrubs None Aquatic Organisms Observed: Riparian Zone: Width of Natural Vegetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - | OOT Right - LOOT Vegetative Layers: Frebs Shrubs Trees Multiple Significant Bare Areas Within Riparian Zone Wes Vo Unknown Evidence Of Non-Buffered Concentrated Flows: Yes No Unknown Tributary Condition: Natural 🏿 Artificial (Man-Made) 🗟 Manipulated Channel Condition: Channelization/Braiding Unnatural Straightening Downcutting Dikes/Berms Excessive Bank Erosion E N/A Disturbances: Livestock Access to Riparian Zone Manure In Stream or On Banks Waste Discharge Pipes Present Other: Habitat Characteristics, Aquatic, and Terrestrial Diversity Description: Habitat ID Number: None Comments: Stream Quality: ■ High ■ Moderate Low

# S\_UTM13\_01738\_1 S\_UTM13\_01738 S901MC002

#### **Waterbody Data Form**

Centerline Re-Route Access Road Ancillary Facility Transmission Centerline ID:  Project Designated Name  Date: 8/21/13 Client/Project Name:  State/County:	
Team: Carl State/County:	Milepost Enter/Exit: 124. 37 – 124.
Team: 901 State/County:	
I'VIIIIIIII	Quad Name:
Logbook No.: Logbook Page No.: Tract No.: ML-MT-MC-00355,000	ML-MT-MC-00350,000
Drawing (Please provide orientation arrow, all features identified, location to centerline, etc.)	# (All 1977) # (All 1977)
NN - AND STATE	
	61958 and
SICH TO SICH THE	
buss and Troes	(1)
350	
Waterbody Type: 圖 Lake 圖 Pond 圖 Borrow Pit 文 Stream 圖 Ag. Ditch 圖 Ol	ther
Stream Flow: Fast Moderate Slow Very Slow None	•
Flow Type:  Perennial (Flows year round)  Intermittent (Flows)	s <3 month
Seasonal (Continuous flow ≥ 3 months) Seasonal (Flows	only in response to rainfall)
	NW 🛭 No Flow
OHWM Width (ft.):	8
Sinuosity:   Braided Meandering Straight N/A	4
Stream Width (ft.): 5/ Water Surface (At Crossing Location	n)
Stream Depth (ft.): 8 0 8 1-3 3-6 8 6-12 2 12-18 18-24 8 24-	36
OHWM Indicators: Defined Bed + Bon K	- Land 40 10 10 10 10 10 10 10 10 10 10 10 10 10
portion vent tout	
Bank Height (ft.): Left: 國 0-2 園 2-4 <b>本</b> 4-6 園 6-8 園 8+	
Bank Helght (ft.): Left: 図 0-2 図 2-4 24-6 図 6-8 図 8+	

Qualitative Attribut	tes	e e e e e e e e e e e e e e e e e e e	<u> Andrikası serini bilistirm</u> ekilik	
Water Ap pearance:	<u> </u>			
■ Clear	Turbid	■ Sheen on Surfac	Floating Algali	mats
Sligh tly Turbid	Very Turbid	Greenish Color	Obvious Surfa	
■ No Flow	Other: 0			
Stream Substrate %:	<del>-                                    </del>			.1
Aquatic Habitats:				
Sand Bar	Gravel Riffle	■ In-stream	Emergent Plant	% Gover:
Gravel Bar	■ Deep Pools		Submerged Plant	
Mud Bar	Bank Root Syste	The state of the s	etlands Characte	
	Overhanging Tre		· cuanus Character	isuos.
Ob Iquatic Ørganisms Ob	•			
Qualic Organishis Ob	Selved.		44	
liparian Zone:	and the first of the second			
Width of Natural Ve	getation Zone from E	dge of Active Channel out	to Flood Plain (ft):	Left - 100 + Right - 100+
/egetative Lavers:	Ferbs Shrubs	Trees Multiple		100 5 115
Significant Bare Are	as Within Rinarian Zo	one Yes No B	Inknown	
vidence Of Non-B	Iffered Concentrated	Flows: Flows: Flows: Flows: Flows	ZHKHOWH	
ributary Condition:		the state of the s		
hannel Condition:		] Artificial (Man-Made)	<u> </u>	
manner Condition.	Channelization/Br	فالمستقم المستقلات		
	<del></del>	aluling 📓 Unnatural S	traightening 📳 D	owncutting
	☑ Dikes/Berms		traightening 🏻 📳 D ank Erosion 🍞 N	_
isturbances:	☑ Dikes/Berms	圖 Excessive B	ank Erosion	/A
Isturbances:	Dikes/Berms Livestock Access	Excessive B to Riparian Zone		/A
Isturbances:	☐ Dikes/Berms  Livestock Access ☐ Waste Discharge	Excessive B to Riparian Zone	ank Erosion	/A
sturbances:	Dikes/Berms Livestock Access	Excessive B to Riparian Zone	ank Erosion	/A
•	☐ Dikes/Berms  Livestock Access ☐ Waste Discharge	圖 Excessive B to Riparian Zone  圖 Ma Pipes Present	ank Erosion	/A
labitat Characteristics	☐ Dikes/Berms  Livestock Access ☐ Waste Discharge ☐ Other:	圖 Excessive B to Riparian Zone  圖 Ma Pipes Present	ank Erosion	/A
labitat Characteristics	☐ Dikes/Berms  Livestock Access ☐ Waste Discharge ☐ Other:	圖 Excessive B to Riparian Zone  圖 Ma Pipes Present	ank Erosion	/A
labitat Characteristics	☐ Dikes/Berms  Livestock Access ☐ Waste Discharge ☐ Other:	圖 Excessive B to Riparian Zone  圖 Ma Pipes Present	ank Erosion	/A
labitat Characteristics	☐ Dikes/Berms  Livestock Access ☐ Waste Discharge ☐ Other:	圖 Excessive B to Riparian Zone  圖 Ma Pipes Present	ank Erosion	/A
labitat Characteristics labitat ID Number:	☐ Dikes/Berms  Livestock Access ☐ Waste Discharge ☐ Other:	圖 Excessive B to Riparian Zone  圖 Ma Pipes Present	ank Erosion	/A
labitat Characteristics	■ Dikes/Berms  Livestock Access ■ Waste Discharge ■ Other: Aquatic, and Terrestrial	園 Excessive B to Riparian Zone 図 Ma Pipes Present  Diversity Description:	ank Erosion	/A
labitat Characteristics labitat ID Number:	■ Dikes/Berms  Livestock Access ■ Waste Discharge ■ Other: Aquatic, and Terrestrial	園 Excessive B to Riparian Zone 図 Ma Pipes Present  Diversity Description:	ank Erosion	/A
labitat Characteristics labitat ID Number:	■ Dikes/Berms  Livestock Access ■ Waste Discharge ■ Other: Aquatic, and Terrestrial	圖 Excessive B to Riparian Zone  圖 Ma Pipes Present	ank Erosion	/A
labitat Characteristics labitat ID Number:	■ Dikes/Berms  Livestock Access ■ Waste Discharge ■ Other: Aquatic, and Terrestrial	園 Excessive B to Riparian Zone 図 Ma Pipes Present  Diversity Description:	ank Erosion	/A
labitat Characteristics Habitat ID Number: Comments:	■ Dikes/Berms  ivestock Access  Waste Discharge  Other: Aquatic, and Terrestrial	園 Excessive B to Riparian Zone 圏 Ma Pipes Present  Diversity Description:  Wone	ank Erosion	/A
labitat Characteristics labitat ID Number: omments:	■ Dikes/Berms  ivestock Access  Waste Discharge  Other: Aquatic, and Terrestrial	園 Excessive B to Riparian Zone 圏 Ma Pipes Present  Diversity Description:  Wone	ank Erosion	/A
labitat Characteristics labitat ID Number: comments:	■ Dikes/Berms  Livestock Access ■ Waste Discharge ■ Other: Aquatic, and Terrestrial	園 Excessive B to Riparian Zone 圏 Ma Pipes Present  Diversity Description:  Wone	ank Erosion	/A
labitat Characteristics Habitat ID Number: Comments:	■ Dikes/Berms  ivestock Access  Waste Discharge  Other: Aquatic, and Terrestrial	園 Excessive B to Riparian Zone 圏 Ma Pipes Present  Diversity Description:  Wone	ank Erosion	/A
abitat Characteristics labitat ID Number: omments:	■ Dikes/Berms  ivestock Access  Waste Discharge  Other: Aquatic, and Terrestrial	園 Excessive B to Riparian Zone 圏 Ma Pipes Present  Diversity Description:  Wone	ank Erosion	/A

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Centerline Re						
	,	Ancillar	/ Facility 📵 Transr	mission Line	a 園 Otho	
			Project Designated	Name:	S real Office	<u> </u>
Dale: Clania	Client/Project Name:	1			\$ }	
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Team:	/ State/County:					211.05
10,	/	MILP	,		Quad Name	7.1105
Logbook No.: Log	book Page No.:	MT Prair	· <del>L</del>			
901	_ 23	W/_	MT PD	2	~ ^	
Drawing (Please provide	Orlentation assault		MT-PR-C	10/15, 0	200	,
Drawing (Please provide	Submation allow, all tes	tures identified, locatio	n to centerline, etc.)			#167 (1975)
11		1, 3, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4, 4,	XX T			
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The same torons		-				
Waterbody Type:	Lake Pond	Borrow Pit Ac Stre	am M Ag Ditob I	704		
Stream Flour		Borrow Pit Stre	The state of the s	Other		
Stream Flow:	Fast Moderate	: ■ Slow ■ Ve	ery Slow None			
Stream Flow:	Fast Moderate Perennial (Flows ye	e ■ Slow ■ Ve ear round)	ery Slow None	Flows <3 m	onth	爾 None
Stream Flow:	Fast Moderate Perennial (Flows yes Seasonal (Continue	e ■ Slow ■ Ve ear round)	ery Slow None	Flows <3 m	onth oresponse	None     to rainfall)
Stream Flow: Flow Type:  Direction of Flow:	Fast Moderate Perennial (Flows yes Seasonal (Continue	e ■ Slow ■ Ve ear round)	Pry Slow None Intermittent (I	Flows <3 m	response	e to rainfall)
Stream Flow:	Fast Moderate Perennial (Flows ye Seasonal (Continue	e Islow Islow ear round) ous flow ≥ 3 months	Pry Slow None  Intermittent (I	Flows <3 m	onth respons No Flo	e to rainfall)
Stream Flow:  Flow Type:  B  Direction of Flow:  OHWM Width (ft.):	Fast Moderate Perennial (Flows ye Seasonal (Continue N NE E	e Islow Is Verear round)  ous flow ≥ 3 months  Is SE Is SE	Intermittent (I Ephemeral (F S SW W	Flows <3 m Flows only in 圈 NW	response	e to rainfall)
Stream Flow:  Flow Type:  Direction of Flow:  OHWM Width (ft.):  Sinuosity:	Fast Moderate Perennial (Flows ye Seasonal (Continue N NE BE  Braided	e Slow	Intermittent (I S S W W W	Flows <3 m Flows only ir 選 NW	response	e to rainfall)
Stream Flow:  Flow Type:  B  Direction of Flow:  OHWM Width (ft.):  Sinuosity:  Stream Width (ft.):	Fast Moderate Perennial (Flows ye Seasonal (Continue N ME E  Braided	e Slow	Intermittent (I Ephemeral (F S SW W	Flows <3 m Flows only ir 選 NW	response	e to rainfall)
Stream Flow:  Flow Type:  B  Direction of Flow:  OHWM Width (ft.):  Sinuosity:  Stream Width (ft.):	Fast Moderate Perennial (Flows ye Seasonal (Continue N NE E  Braided  20	ear round)  ous flow ≥ 3 months  SE SE  Meandering  Water S	Intermittent (IS) Ephemeral (FS) W W W	Flows <3 m Flows only in NW N/A	No Flo	e to rainfall)
Stream Flow:  Flow Type:  Direction of Flow:  OHWM Width (ft.):  Sinuosity:  Stream Width (ft.):	Fast Moderate Perennial (Flows ye Seasonal (Continue N NE BE Braided D 0 B 1-3	ear round)  bus flow ≥ 3 months  SE SE  Meandering  Water S  3-6   6-12   8	Intermittent (IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Flows <3 m Flows only in NW N/A	No Flo	e to rainfall)
Stream Flow:  Flow Type:  B  Direction of Flow:  OHWM Width (ft.):  Sinuosity:  Stream Width (ft.):  Stream Depth (ft.):  OHWM Indicators:	Fast Moderate Perennial (Flows ye Seasonal (Continue N NE E Braided DO 11-3 NE Define	ear round)  ous flow ≥ 3 months  SE SE  Meandering  Water S  3-6 ■ 6-12 ■  A Bed **Box k	Intermittent (IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Flows <3 m Flows only in NW N/A	No Flo	e to rainfall)
Stream Flow:  Flow Type:  B  Direction of Flow:  OHWM Width (ft.):  Sinuosity:  Stream Width (ft.):	Fast Moderate Perennial (Flows ye Seasonal (Continue N NE BE  Braided  Braided  Define Left: 80-2 [	Bear round)  Pous flow ≥ 3 months  BE BS  Meandering Water S  3-6 B 6-12 B  A Bed B k  B 2-4 B 4-6	Intermittent (Intermittent (In	Flows <3 m Flows only in NW N/A	No Flo	e to rainfall)
Stream Flow:  Flow Type:  Direction of Flow:  OHWM Width (ft.):  Sinuosity:  Stream Width (ft.):  OHWM Indicators:  Bank Height (ft.): (Looking Downstream)	Fast Moderate Perennial (Flows ye Seasonal (Continue N NE E  Braided  Perennial (Flows ye 1	Bear round)  Pous flow ≥ 3 months  BE BS  Meandering Water S  3-6 B 6-12 B  A Bed B k  B 2-4 B 4-6	Intermittent (IIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIIII	Flows <3 m Flows only in NW N/A	No Flo	e to rainfall)
Stream Flow:  Flow Type:  B  Direction of Flow:  OHWM Width (ft.):  Sinuosity:  Stream Width (ft.):  Stream Depth (ft.):  OHWM Indicators:  Bank Height (ft.):	Fast Moderate Perennial (Flows ye Seasonal (Continue N NE E  Braided  Perennial (Flows ye Seasonal (Continue N NE E  N	Slow Verent Ver	Intermittent (Intermittent (In	Flows <3 m flows only in N/A N/A catton)	No Flo	e to rainfall)

Qualitative Attribut	tes the state of t
Water Ap pearance:	
■ Clear	Turbid  Sheen on Surfac  Floating Algebrats
Slightly Turbid	Wery Lurbid Screenish Color Screenish Color
No Flow	Other: D/
Stream Substrate %:	
Aquatic Habitats:	
Sand Bar	Gravel Riffle In-stream Emergent Plant 80% Cover:
Gravel Bar	In-stream Submerged Plant 1/ Covers
Mud Bar	画 Finding Wetlands Characteristics
Undercut Banks	None
Aquatic Organisms Ob	oserved:
Riparian Zone:	
	agolation Zone from Education
Wassissi mululul Ve	egetation Zone from Edge of Active Channel out to Flood Plain (ft): Left - 20 Right - 30
Yogoldii Yo Layolo,	MAN TOTO
Significant Bare Are	eas WithIn Riparian Zone Yes No I Unknown
Tributary Condition:	Buffered Concentrated Flows: Yes No White Unknown
ributary Condition:	Matural Artificial (Man-Made) Manipulated
Channel Condition:	E Channalization Deals!
	® Dikes/Barms
Disturbances:	E LIOSONE DAIN ETOSON
4	Waste Discharge Pipes Present  Manure In Stream or On Banks
	Solution Distriction Present  Solu
Habitat Characteristics	s, Aquatic, and Terrestrial Diversity Description:
Habitat ID Number:	
	. Nore
Comments:	
O. P. C.	Marl
O. P. C.	
O. P. C.	Marl
Oliver Accellan	Marl

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# \*Only Complete for Watercourse with Defined Bed and Bank

#### WESTECH Watercourse Survey Data Form Keystone XL Project

Date: 10/23/2018	Field Crew: D. Hagen, P. Christensen	State: MT	Adjacent Wetland
Site ID: S1023620DA001	Watercourse Name: Tributary to the Yellov		WL Plot # W1023620DA001_W1
Milepost 199.84	water course Name. Imputary to the relieve	vstolie rivei	Fringe Wetland w/in OHWM Width (ft)
Photo IDs			Left side: 2-3
DH03 - DH06			Right side: 2-3
	WATERCOURSE	CHADACTEDICTICS	
Unique Features	WATERCOORSE	CHARACTERISTICS	
	Riparian shrub Gravel bars/islands	☐ Riprap ☐ Diversion/Intake ☐	Erosion/Unstable banks
☐ Cut-off channels ☐	Buildings ☐ Dam ☐ Seeps ☐ Other	:	
Estimated Watercourse I	Dimensions Within ESA (ft)		
Avg Water Depth: 0.2		M Width: 10 Avg Channel W	/idth: 2
Stream Gradient (%): 3			
Downstream Left Bank C	haracteristics	Downstream Right Bank Characte	rictics
Avg Height (ft): 1	Haracteristics	Avg Height (ft): 1	ristics
Avg Slope: ✓ Gentle (0-1	L0%)   Moderate (10-50%)	Avg Slope: ✓ Gentle (0-10%)	Moderate (10-50%)
☐ Steep (50+	%) $\square$ Vertical	☐ Steep (50+%) ☐	Vertical
Dominant Vegetation by	Stratum (use 6-letter code)	Dominant Vegetation by Stratum (	(use 6-letter code)
Tree: Ela ang Po	p del Sal amy	Tree: Ela ang	
Shrub: Ros woo Syn	m occ	Shrub: Ros woo	
Herb: Car neb Po	a pra Sol canl	Herb: Car neb Poa pra	Sol canl
Noxious Weeds Observe	d		
Species:	Species:	Species:	
•	$\square$ 3 $\square$ 4 $\square$ 5 Density*: $\square$ 1 $\square$ 2	2 🗌 3 🔲 4 🔲 5 Density*:	: 🗌 1 🔲 2 🔲 3 🔲 4 🔲 5
*estimated stems per 0.01-a	acre: 1 = <1; 2 = 1-5; 3 = 5-10; 4 = 10-50; 5 = >50		
	WATERCOURS	E CLASSIFICATION	
Riverine  ✓ 2 - Lower Perennial	A Linconsolidated Dattom	d O Rocky Shore O Unconsolic	datad Chara
	<ul> <li>Unconsolidated Bottom</li> <li>Aquatic Bed</li> <li>Rock Bottom</li> <li>Unconsolidated Bottor</li> </ul>	•	
	Streambed:	Aquatic Bed Chocky Silo	Te Officonsolidated Shore
☐ Ephemeral	treambed.		
Palustrine  ○ Rock Bottom ○ Unc	consolidated Bottom O Aquatic Bed	Unconsolidated Shore	
	onsolidated bottom	officonsolidated shore	
Lacustrine  ☐ 1 - Limnetic ○ Rock	Bottom O Unconsolidated Bottom O	Aquatic Bed	
2 - Littoral Rock		_	Jnconsolidated Shore
	Sottom Conconsolidated Bottom CA	qualic bed O Rocky Shore O C	Jilconsolidated Shore
Man-Made Drainage  ☐ Canal ☐ Irrigation [	Ditch ☐ Drainage Ditch ☐ Roadside Di	itch $\ \square$ Grassed Waterway $\ \square$ I	mpoundment
_	•	•	•
persistent	a channel; water, when present, usually flowingemergents, trees, shrubs, or emergent mosses cover ≥ 30	)% of area	
<ul><li>persistent of area &lt; 2</li></ul>	emergents, trees, shrubs, or emergent mosses cover < 30 0 acres	% of area	
	ave-formed or bedrock shoreline feature present <i>and</i> wa -formed or bedrock shoreline feature present <i>or</i> water ≥	· · · · · · · · · · · · · · · · · · ·	
	0 acres	•	• •

#### WESTECH Watercourse Survey Data Form Keystone XL Project

Site ID: S1023620DA001

	UDAUUI
FISHERIES	
% Within ESA	
Riffle: 50 Run: 50 Pool: 0 Other: 0	
% Instream Fish Cover Within ES	
Boulders: 0 Logs/Debris: 0 Undercut Banks: 0 Structures: 0	
Fish Observed	
Species: Species: Species:	
NOTES	
Comments (notes on wildlife observed, erosion, livestock impacts, etc.)	
Evidence of recent livestock use.	
Cross-Section Drawing show width and depth for OHWM and channel	-
18	
10	
allow offers	
affull & channel	
A Commen	
1' water	

# \*Only Complete for Watercourse with Defined Bed and Bank

#### WESTECH Watercourse Survey Data Form Keystone XL Project

Date: 10/23/2018	Field Crew: D. Hagen, P. Christensen	State: MT	Adjacent Wetland
Site ID: S1023620DA002	Watercourse Name: Tributary to the Yellov		WL Plot # none
Milepost 198.37	]		Fringe Wetland w/in OHWM Width (ft)
Photo IDs			Left side: N/A
DH17 - DH18			Right side: N/A
	WATERCOURSE	CHARACTERISTICS	
Unique Features			
	•		Erosion/Unstable banks
☐ Cut-off channels ☐	Buildings Dam Seeps Other	:	
Estimated Watercourse Depth: 0	Dimensions Within ESA (ft)  Avg Water Width: 0 Avg OHW	M Width: 1.5 Avg Channel W	/idth: 1.5
Stream Gradient (%): 3			
Downstream Left Bank C Avg Height (ft): 1	haracteristics	Downstream Right Bank Characte Avg Height (ft): 1	eristics
Avg Slope: ✓ Gentle (0-1	.0%)	Avg Slope: ✓ Gentle (0-10%)	Moderate (10-50%)
☐ Steep (50+	_		Vertical
	Stratum (use 6-letter code)	Dominant Vegetation by Stratum  Tree: Pru vir	
	can	Shrub:	
	r tra	Herb:	
		nero.	
Noxious Weeds Observed Species: Eup esu	Species:	Species:	
Density*: 1 2 2		-	:
•	acre: 1 = <1; 2 = 1-5; 3 = 5-10; 4 = 10-50; 5 = >50	E E S E 4 E S Delisity	
	WATERCOURS	CLASSIFICATION	
Riverine  2 - Lower Perennial	○ Unconsolidated Bottom ○ Aquatic Be	d O Dooley Sharo O Unconcoli	datad Chara
	Rock Bottom	•	_
	treambed:	Aquatic Bed C Rocky Silo	ore Officonsolidated shore
✓ Ephemeral Unconsolid			
	lateu Bottom		
Palustrine  ○ Rock Bottom ○ Unc	onsolidated Bottom O Aquatic Bed O	Unconsolidated Shore	
Lacustrine			
1 - Limnetic		Aquatic Bed	
2 - Littoral Rock E	Bottom O Unconsolidated Bottom O A	quatic Bed ○ Rocky Shore ○ U	Jnconsolidated Shore
Man-Made Drainage  ☐ Canal ☐ Irrigation D	Ditch ☐ Drainage Ditch ☐ Roadside D	itch 🗌 Grassed Waterway 🔲	Impoundment
persistent e	a channel; water, when present, usually flowingemergents, trees, shrubs, or emergent mosses cover ≥ 30	% of area	
<ul><li>persistent e</li><li>area &lt; 20</li></ul>	emergents, trees, shrubs, or emergent mosses cover < 30 Dacres	% of area	
	ave-formed or bedrock shoreline feature present <i>and</i> wa -formed or bedrock shoreline feature present <i>or</i> water ≥		

#### WESTECH Watercourse Survey Data Form Keystone XL Project

Site ID: S1023620DA002

% Within ESA Riffle: O Run: O Pool: O Other: O  **Notream Fish Cover Within ES**  **Boulders: O Logs/Debris: O Undercut Banks: O Structures: O  **Fish Observed  **Species: Species: Species: Species: Species:   **NOTES**  **Comments** (notes on wildlife observed, erosion, livestock impacts, etc.)  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing show width and depth for OHWM and channel**  **Cross-Section Drawing				FI	SHERIES		
% Instream Fish Cover Within ES Boulders: O Logs/Debris: O Undercut Banks: O Structures: O  Fish Observed Species: Species: Species:  NOTES  Comments (notes on wildlife observed, erosion, livestock impacts, etc.)							
Boulders: O Logs/Debris: O Undercut Banks: O Structures: O Fish Observed Species: Species: Species: Species: NOTES  Comments (notes on wildlife observed, erosion, livestock impacts, etc.)  Cross-Section Drawing show width and depth for OHWM and channel	Riffle: 0	Run: 0	Pool: 0	Other: 0			
Fish Observed Species: Species: Species: NOTES  Comments (notes on wildlife observed, erosion, livestock impacts, etc.)  Cross-Section Drawing show width and depth for OHWM and channel						_	
Species: Species: Species: NOTES  Comments (notes on wildlife observed, erosion, livestock impacts, etc.)  Cross-Section Drawing show width and depth for OHWM and channel	Boulders: 0	Logs/Del	bris: 0	Jndercut Banks: 0	Structures: 0		
NOTES  Comments (notes on wildlife observed, erosion, livestock impacts, etc.)  Cross-Section Drawing show width and depth for OHWM and channel	Fish Observed	I					
Cross-Section Drawing show width and depth for OHWM and channel	Species:			Species:		Species:	
Cross-Section Drawing show width and depth for OHWM and channel					NOTES		
	Comments (n	otes on wildlife o	bserved, erosion, l	livestock impacts, etc.)			
offwlm 1'] Dry	Cross-Section	<b>Drawing</b> show v	vidth and depth fo	r OHWM and channel	- A1-2		
offwm 11 Dry							
ofwm 17 Dry							
offwM 11 Dry	9)						
offwM 1/1 Dry							100
offwm 11 Dry							/
of which is a second of the se							
ofwm 17 Dry			8	#14.8000 <b>#</b> 15			
1/1 200		\		offwM	And the second second second second	and schools on the state of the	and the second s
			1'	Dry/			
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				1			

# \*Only Complete for Watercourse with Defined Bed and Bank

#### WESTECH Watercourse Survey Data Form Keystone XL Project

	7	•	
Date: 10/23/2018	Field Crew: D. Hagen, P. Christensen	State: MT	Adjacent Wetland
Site ID: S1023620DA003	Watercourse Name: Tributary to the Yellow	stone River	WL Plot # none
Milepost 198.37			Fringe Wetland w/in OHWM Width (ft)
Photo IDs			Left side: N/A
DH13 - DH14			Right side: N/A
	WATERCOURSE	CHARACTERISTICS	
Unique Features	WATERCOOKSE	HARACIERISTICS	
	Riparian shrub $\ \square$ Gravel bars/islands $\ \square$	☐ Riprap ☐ Diversion/Intake ☐	Erosion/Unstable banks
$\square$ Cut-off channels $\square$	Buildings $\square$ Dam $\square$ Seeps $\square$ Other:		
Estimated Watercourse I	Dimensions Within ESA (ft)		
Avg Water Depth: 0	Avg Water Width: 0 Avg OHWN	1 Width: 4 Avg Channel Wi	dth: 1
Stream Gradient (%): 3			
Downstream Left Bank C	haracteristics	Downstream Right Bank Character	istics
Avg Height (ft): 2		Avg Height (ft): 2	
Avg Slope: 🗹 Gentle (0-1	.0%)	Avg Slope: ✓ Gentle (0-10%)	Moderate (10-50%)
☐ Steep (50+	%)   Vertical	☐ Steep (50+%) ☐ \	Vertical
Dominant Vegetation by	Stratum (use 6-letter code)	Dominant Vegetation by Stratum (u	ise 6-letter code)
Tree:		Tree:	
	e arg	Shrub: Ros woo She arg	
Herb: Poa pra	r smi	Herb: Poa pra Agr smi	
Noxious Weeds Observe	<u> </u>		
Species: Eup esu	Species:	Species:	
Density*:   1 2	•	☐ 3 ☐ 4 ☐ 5 Density*:	
restimated stems per 0.01-a	acre: 1 = <1; 2 = 1-5; 3 = 5-10; 4 = 10-50; 5 = >50		
<u> </u>	WATERCOURSE	CLASSIFICATION	
Riverine  2 - Lower Perennial	○ Unconsolidated Bottom ○ Aquatic Bed	Rocky Shore	ated Shore
	○ Rock Bottom ○ Unconsolidated Bottom	·	
	Streambed:	- Addatic Bed - Allocky Shork	o oneonsonauteu shore
✓ Ephemeral Unconsolid			
•	acted bottom		
Palustrine  ○ Rock Bottom ○ Unc	consolidated Bottom O Aquatic Bed O L	Jnconsolidated Shore	
	onsonatica Bottom ( ) / (qualic Bea ( ) )	moonsondated shore	
Lacustrine  ☐ 1 - Limnetic  ○ Rock	Bottom O Unconsolidated Bottom O A	quatic Bed	
☐ 2 - Littoral ☐ Rock I			nconsolidated Shore
		ductio Bed ( ) Hookly Shore ( ) Of	moonsondated shore
Man-Made Drainage  ☐ Canal ☐ Irrigation [	Ditch ☐ Drainage Ditch ☐ Roadside Dit	ch Grassed Waterway 🗌 In	npoundment
_	a channel; water, when present, usually flowing	·	·
persistent e	emergents, trees, shrubs, or emergent mosses cover ≥ 30%	6 of area	PALUSTRINE (P)
<ul><li>persistent €</li><li>area &lt; 2</li></ul>	emergents, trees, shrubs, or emergent mosses cover < 30% O acres	or area	
	ave-formed or bedrock shoreline feature present $and$ wate-formed or bedrock shoreline feature present $or$ water $\geq 2$	· · · · · · · · · · · · · · · · · · ·	* *
	0 acres	·	` '

#### WESTECH Watercourse Survey Data Form Keystone XL Project

Site ID: S1023620DA003

				FISHERIES		
% Within ESA	<u> </u>					_
Riffle: 0	Run: 0	Pool: 0	Other: 0			
% Instream F	ish Cover Withi	n ES				
Boulders: 0	Logs/De	ebris: 0	Undercut Banks: 0	Structures: 0		
Fish Observe	d					
Species:			Species:		Species:	
<u></u>				NOTES		
Comments (	notes on wildlife (	observed, erosi	on, livestock impacts, etc.	.)		
Cross-Section	Drawing show	width and dept	h for OHWM and channe	1		
100						
7						
1			OHWM 4'			
1			OHMM.			
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				1		
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# \*Only Complete for Watercourse with Defined Bed and Bank

#### WESTECH Watercourse Survey Data Form Keystone XL Project

Date: 10/23/2018	Field Crew: D. Hagen, P. Christensen	State: MT	Adjacent Wetland
Site ID: S1023620DA004	Watercourse Name: Tributary to the Yellov		WL Plot # W1023620DA002_W1
Milepost 198.37	watercourse Name. Imputary to the Tellov	Stone river	Fringe Wetland w/in OHWM Width (ft)
Photo IDs			Left side: N/A
DH23 - DH24			Right side: N/A
	WATERCOURSE	CHARACTERISTICS	
Unique Features		<u> </u>	
☐ Riparian forest ☐ F	Riparian shrub $\ \square$ Gravel bars/islands $\ \square$	☐ Riprap ☐ Diversion/Intake	Erosion/Unstable banks
☐ Cut-off channels ☐	Buildings		
Estimated Watercourse I	Dimensions Within ESA (ft)		
Avg Water Depth: 0.3	Avg Water Width: 3 Avg OHWN	M Width: 8 Avg Channel W	/idth: 5
Stream Gradient (%): 3			
Downstream Left Bank C Avg Height (ft): 1	haracteristics	Downstream Right Bank Characte Avg Height (ft): 1	eristics
Avg Slope: ✓ Gentle (0-1	.0%)	Avg Slope: ✓ Gentle (0-10%)	Moderate (10-50%)
☐ Steep (50+	%)   Vertical	☐ Steep (50+%) ☐	Vertical
	Stratum (use 6-letter code) u vir	Dominant Vegetation by Stratum Tree: Pop del	(use 6-letter code)
Shrub: Art arb	r noh Col cont	Shrub: Art arb	
<u> </u>	r neb Sol canl	Herb: Poa pra Car neb	
Noxious Weeds Observed Species: Eup esu	Species:	Species:	
Density*: 1 2	· L		:
•	acre: 1 = <1; 2 = 1-5; 3 = 5-10; 4 = 10-50; 5 = >50	.   5   4   5   Delisity	
	WATERCOURSE	CLASSIFICATION	
Riverine  ✓ 2 - Lower Perennial	Unconsolidated Bottom	I ○ Rocky Shore ○ Unconsoli	dated Shara
	Rock Bottom	•	
	Streambed:	- Aquatic Bed Onocky Sile	ore officerisolidated shore
☐ Ephemeral	areamoeu.		
Palustrine			
	onsolidated Bottom O Aquatic Bed	Unconsolidated Shore	
Lacustrine			
	Bottom O Unconsolidated Bottom O A	Aquatic Bed	
☐ 2 - Littoral ○ Rock I	Bottom O Unconsolidated Bottom O A	quatic Bed O Rocky Shore O I	Unconsolidated Shore
Man-Made Drainage			
☐ Canal ☐ Irrigation [	Ditch 🗌 Drainage Ditch 🔲 Roadside Di	tch Grassed Waterway	Impoundment
	a channel; water, when present, usually flowing		
	emergents, trees, shrubs, or emergent mosses cover ≥ 30° emergents, trees, shrubs, or emergent mosses cover < 30°		PALUSTRINE (P)
• area < 2 • no wa	0 acres ave-formed or bedrock shoreline feature present <i>and</i> wat	er < 2 m deep	PALLISTRINF (P)
■ wave	-formed or bedrock shoreline feature present <i>or</i> water > : 0 acres	2 m deep	LACUSTRINE (L)

#### **WESTECH Watercourse Survey Data Form Keystone XL Project**

								Site	e ID: S1023620DA00
				FISH	ERIES				
% Within ESA									
Riffle: 50	Run: 50	Pool: 0	Other: 0						
% Instream Fis	sh Cover Withi	n ES							
Boulders: 0	Logs/De	bris: 5	Undercut Banks:	0	Structures:	0			
Fish Observed									
Species:			Species:				Species:		
<b>C</b>					TES				
			on, livestock impacts, e disturbance of str						
Cross-Section	<b>Drawing</b> show	width and dept	h for OHWM and char	nnel					
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